SDMS US EPA Region V

Imagery Insert Form

Document ID: 165270

Some images in this document may be illegible or unavailable in SDMS. Please see reason(s) indicated below:

[X] Illegible due to bad source documents. Image(s) in SDMS is equivalent to hard copy.

Specify Type of Document(s) / Comments:

SOME PHOTOS IN THE FIGURES SECTION

[ ] Includes _____ COLOR or _____ RESOLUTION variations.
Unless otherwise noted, these pages are available in monochrome. The source document page(s) is more legible than the images. The original document is available for viewing at the Superfund Records Center.

Specify Type of Document(s) / Comments:

[ ] Confidential Business Information (CBI).
This document contains highly sensitive information. Due to confidentiality, materials with such information are not available in SDMS. You may contact the EPA Superfund Records Manager if you wish to view this document.

Specify Type of Document(s) / Comments:

[ ] Unscannable Material:
Oversized ____ or _____ Format.
Due to certain scanning equipment capability limitations, the document page(s) is not available in SDMS. The original document is available for viewing at the Superfund Records center.

Specify Type of Document(s) / Comments:

[ ] Document is available at the EPA Region 5 Records Center.

Specify Type of Document(s) / Comments:

Rev. 07/10/02

ALLIED PAPER, INC./PORTAGE CREEK/ KALAMAZOO RIVER SUPERFUND SITE REMEDIAL INVESTIGATION/ FEASIBILITY STUDY

TECHNICAL MEMORANDUM 3

RESULTS OF THE FLOODPLAIN SOILS INVESTIGATION VOLUME 1 OF 2

Allied Paper, Inc./Portage Creek/
Kalamazoo River Superfund Site
Kalamazoo, Michigan

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Allied Paper, Inc./Portage Creek/ Kalamazoo River Superfund Site Remedial Investigation/Feasibility Study

Technical Memorandum 3

Results of the Floodplain Soils Investigation Volume 1 of 2

Allied Paper, Inc./Portage Creek/
Kalamazoo River Superfund Site
Kalamazoo, Michigan

February 1994

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

6723 Towpath Road
Syracuse, New York 13214
(315) 446-9120

Table of Contents

Table of Contents (Cont'd.)

TABLES

FIGURES

Table of Contents (Cont'd.)

APPENDICES

Disclaimer

This document was prepared by the Respondents pursuant to a government Administrative Order. This document has received final acceptance from the Michigan Department of Natural Resources. The opinions, findings, and conclusions expressed, unless otherwise noted, are those of the authors and not those of the Michigan Department of Natural Resources.

Section 1 - Introduction

1.1 Portage Creek/Kalamazoo River Description

The Portage Creek and Kalamazoo River are located in southwestern Michigan (Figure 1). The main stem of the Kalamazoo River begins in Albion, Michigan at the confluence of the North and South Branches, and flows northwesterly for 123 miles through Kalamazoo and Allegan Counties to Lake Michigan. The Kalamazoo River drains approximately 2,000 square miles and is fed by more than 400 miles of tributaries.

The Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site (Site) includes the lower three miles of Portage Creek, a tributary which joins the Kalamazoo River at Kalamazoo, Michigan (Figure 2). Portage Creek begins in Portage, Michigan, and including its West Fork, flows a distance of approximately 18.5 miles. The lower segment of Portage Creek passes through residential and industrial areas of Kalamazoo (Figure 3).

A more extensive review of the physical setting and characteristics of the Site is contained in the Description of Current Situation (DCS) Report (Blasland & Bouck, 1992).

1.2 Portage Creek/Kalamazoo River Floodplain Soils Investigation Background

The presence of polychlorinated biphenyls (PCB) in the Kalamazoo River has been the subject of a number of studies since 1971. These studies, which have been documented in the DCS Report (Blasland & Bouck, 1992), have produced a database sufficient for an initial assessment.

PCB migration within the Site depends primarily upon river-based transport. Dissolved-phase or suspended-phase transport may occur in the water column.

The transport of PCB in river systems can include the erosion, resuspension, and floodplain deposition of sediments. This transport mechanism is greatly influenced by flow conditions and location-specific channel geometry. Historical flood events on the Kalamazoo River may have produced conditions conducive to sediment transport and deposition onto the floodplain areas adjacent to the river channel. Flood events relevant to the occurrence and distribution of PCB in floodplain soils, are flood events that occurred from the time PCB probably first appeared in Kalamazoo River sediments (mid-1950s) to the present. Flood flows exceeding those expected every 25 years occurred in the Kalamazoo basin in 1947, 1948, 1950, and 1985. The 1985 high flow is the only event exceeding the expected 25-year discharge since the introduction of PCB to the Kalamazoo River. More recently, high discharges have occurred in 1975, 1978, 1982, 1984, 1985 [Federal Emergency Management Agency (FEMA), 1981; 1984; 1989], and 1989 (USGS, 1990).

Insufficient historical information was available to assess the potential amount of PCB transported to the Kalamazoo River floodplain. Therefore, the floodplain soils investigation was approved as part of the July 1993 Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site Remedial Investigation/Feasibility Study (RI/FS) Work Plan (Blasland & Bouck, 1993). The floodplain soils investigation field work was

conducted during July and August 1993. Preparatory to this investigation, the 100-year floodplain was defined based on floodplain information from FEMA Flood Insurance Studies (FEMA, 1981; 1984; 1989), USGS Flood Prone Area Maps (USGS, 1973; 1974; 1976), and a study by GZA-Donohue (GZA-Donohue, 1990). To assure complete coverage, an estimate of the 100-year floodplain for the pre-drawdown period at the former impoundments (i.e., prior to 1965 when the reservoir level was lowered) was also determined.

1.3 Objective of the Floodplain Soils Investigation

The primary objective of the Kalamazoo River/Portage Creek Floodplain Soils Investigation is to assess whether historical flooding may have transported sediments containing PCB in significant quantities to the floodplain. This issue was addressed by sampling selected floodprone areas along the Kalamazoo River and Portage Creek. Corollary objectives include the assessment of the relationships among distance from the river, surface elevation, and PCB concentration (if any) in the soils; and to screen for the potential presence of other constituents on the USEPA Contract Laboratory Program (CLP) Target Compound List (TCL) and Target Analyte List (TAL).

1.4 Scope of the Technical Memorandum

The scope of the technical memorandum is the presentation of data and findings of the floodplain soils investigation performed at the Kalamazoo River and Portage Creek. This memorandum includes a description of sampling activities; results of the quality assurance/quality control (QA/QC) review; analytical and field data; and findings.

Section 2 - Investigation Activities

2.1 Portage Creek/Kalamazoo River Floodplain Soils Characterization

A total of five Kalamazoo River floodplain sampling transects (KF1 through KF5) were established between the confluence with Portage Creek and the city of Allegan. The transects extend to the approximate limit of the 100-year floodplain. Transects were located in flood-prone areas. Land ownership and potential usage were also considered in the transects' selection. The transect locations include recreational lands owned by various municipalities. The upstream-most transect KF1 was located in Verburg Park, just south of Paterson Street in Kalamazoo (Figures 3, 13, and 24). Transect KF2 was placed south of D Avenue on land owned by Cooper Township (Figures 4, 14, and 25). These two transects extend outward on the west bank due to the fact that the east bank is privately owned. Transect KF3 (Brookside Park, Otsego) is similar since only the south side of the Kalamazoo River is publicly owned (Figures 5, 15, and 26). Transect KF4 is an extension of an impoundment transect located in the former Otsego Dam Impoundment on MDNR-owned land (Figures 6, 16, and 27). The downstream most transect in this section, KF5, was located downstream of Trowbridge Dam (Figures 7, 17, and 28).

At each transect, samples were collected from five to nine locations within the 100-year floodplain. Although the sampling extends to the 100-year floodplain elevation, sampling was more focused in the areas closer to the Kalamazoo River. Each sampling location was surveyed to accurately record its location and elevation. At each location, two samples for PCB analysis were collected at 6-inch intervals to a depth of 12 inches. Total Organic Carbon (TOC) content of the 0- to 6-inch interval was determined. Samples taken near the boundary of the estimated 100-year floodplain were screened by immunoassay PCB testing procedures. Where the 100-year floodplain boundary sample had detectable PCB (>1.0 mg/kg), the transect was extended until the soil PCB were not detected. Where the initial boundary sample was below detection, sampling proceeded along the transect toward the Kalamazoo River. At the two locations nearest the Kalamazoo River, along each transect, an additional sample 12- to 24-inches deep was collected and analyzed for PCB concentration. One location from the near river portion of each of the five floodplain transects was selected arbitrarily by field personnel and in concurrence with MDNR representatives for TCL/TAL analyses. Table 2-1 lists TCL/TAL constituents tested.

Two floodplain sampling transects (PF1 and PF2) were established in the lower Portage Creek area (Figure 3). Although portions of lower Portage Creek have been channelized for flood control, two areas where flooding is suspected to have occurred were targeted for further characterization of PCB. The first area is a flood-prone area located north of Reed Street. Within this area, a total of five sampling locations were randomly distributed (Figures 3 and 11). The second area is near Upjohn Park located adjacent to Crosstown Parkway on the east bank of Portage Creek. At this location, a Portage Creek transect was established and a total of five locations were sampled (Figures 3 and 12). Sampling was performed at 6-inch intervals to a total depth of 12 inches below the surface. Each of the surface samples (0- to 6-inches) was analyzed for PCB and TOC content, while the deeper samples (6- to 12-inches) were analyzed for PCB only.

2.2 Floodplain Soils Characterization Downstream of Lake Allegan

Floodplain soil samples were collected along transects KF6, KF7, and KF8 located in the Koopman Marsh/Swan Creek Marsh area. Along each transect, five core samples were collected at approximately 100-foot intervals. The upper six inches of each core were analyzed for PCB and TOC. The 6- to 12-inch interval and 12- to 24-inch interval were analyzed for PCB only.

2.3 Ottawa and Pottawatamie Marsh Soil/Sediment Characterization

The RI/FS Work Plan provides for an assessment of whether the Ottawa and Pottawatamie marshes are acting as sinks for chemicals, three cores were collected from each of these areas. The locations of Ottawa Marsh cores OM-1, OM-2, and OM-3 are shown on Figures 8, 9, 21, 22, and 29. The locations of Pottawatamie Marsh cores PM-1, PM-2, and PM-3 are shown on Figures 10, 23, and 30. The 0- to 2- inch, 2- to 6-inch, 6- to 12-inch, 12- to 24-inch, and 24- to 36-inch intervals were analyzed for PCB. Each core from the 2- to 6-inch interval was analyzed for TCL/TAL constituents.

Table 2-2 summarizes the sampling locations, analyses, and number of samples for all Kalamazoo River/Portage Creek and Ottawa/Pottawatamie Marsh floodplain soils collected.

2.4 Sample Collection Methods and Sample Identification

A total of five floodplain transects were established between the confluence with Portage Creek and the city of Allegan. In addition, three transects were established in the Kalamazoo River Floodplain downstream of Allegan Dam.

2.4.1 Floodplain Soils Sample Collection

Each transect had five to nine stations. Each station's location and elevation was accurately surveyed using conventional ground surveying methods. Samples were collected using either a stainless steel hand auger or a stainless steel scoop. Samples were collected at 0- to 6-inches and 6- to 12-inches at all locations and analyzed for PCB. The two stations nearest the river had an additional 12- to 24-inch deep sample collected for PCB analysis. The 0- to 6-inch interval sample was also analyzed for TOC. One sampling point from each of the transects upstream of the city of Allegan were analyzed for TCL volatiles, semi-volatiles, pesticides, and TAL constituents in the 0- to 6-inch and 6- to 12-inch intervals. Samples collected near the 100-year floodplain boundary were analyzed for PCB using the immunoassay field screening method. Soil sampling in the floodplain of Portage Creek was performed at 6-inch intervals to a depth of 12 inches below the surface using a hand-driven, split-spoon sampler. The 0- to 6-inch interval was analyzed for both TOC and PCB and the 6- to 12-inch interval was analyzed for PCB.

Samples are identified based on transect, station, and depth, as follows:

KF1	-	1	A	(A = 0- to 6-inch, B = 6- to 12-inch, and
transect		station	depth	C = 12- to 24-inch depth)

Samples are also identified using a six-digit numeric code.

2.4.2 Marsh Sediment Sample Collection

Three cores were collected from both the Ottawa and Pottawatamie Marshes. The approximate locations of cores OM-1, OM-2, OM-3 are shown on Figures 8, 9, and 29. The approximate locations of cores PM-1, PM-2, and PM-3 are shown on Figures 10, 23, and 30. The 0- to 2-inch, 2- to 6-inch, 6- to 12-inch, 12- to 24-inch, and 24- to 36-inch intervals were analyzed for PCB. For one of the three cores at each marsh (i.e., OM-1 and PM-1), the 2- to 6-inch interval was analyzed for TCL/TAL constituents, in addition to PCB. Samples are identified based on marsh, core location, and depth, as follows:

OM	-	1	A	(A = 0- to 2-inch, B = 2- to 6-inch , C = 6- to
marsh		location	depth	12-inch, D = 12- to 24-inch, and E = 24- to 36-inch depth)

2.5 QA/QC Review of Data

2.5.1 Precision and Accuracy Assessment for PCB Laboratory Analyses

Data packages for the floodplain PCB soil sample analyses were reviewed and checked for analytical precision and accuracy. Thirteen sample delivery groups (SDGs), designated as 37849, 37852, 37856, 37807, 38392, 38383, 38075, 37919, 37978, 38002, 37980, 37880, and 38393 were reviewed and evaluated. Table 2-3 presents the SDGs and the associated samples.

Laboratory analysis precision was assessed by comparing the analytical results between matrix spike (MS) and matrix spike duplicate (MSD) samples. Field duplicates were also used to assess the overall precision of the laboratory analysis. The relative percent differences (RPD) were calculated for each pair of duplicate analysis. The RPD calculations for field duplicates were based on total PCB content.

In addition to the matrix spike data, other indicators of accuracy such as surrogate spike and blank spike recovery data, were examined to assess the analytical method's accuracy.

An overall precision and accuracy summary, as determined in the data validation of all SDGs, including MS/MSD recovery data, field duplicate RPD calculation results, surrogate spike recovery data, blank spike recovery data and blank contamination detection, is presented below.

All MS/MSD recoveries were within acceptable control limits for all SDGs. However, the original analysis of the MS/MSD for SDG 38002 had recoveries of both surrogate and matrix spiked compounds below acceptable limits. The samples were subsequently re-extracted with acceptable

recoveries. The initial poor recoveries are believed to be extraction related and isolated to the spike samples only. There was no MS included with SDG 38392.

Matrix spike recoveries for Aroclor 1242 ranged from 37 to 83 percent with an average of 64.4 percent, while recoveries for Aroclor 1254 ranged from 27 to 86 percent with an average of 67.4 percent. Blank spike recoveries were somewhat higher with Aroclor 1242 ranging from 54 to 112 percent recovery with an average of 78.8 percent, and Aroclor 1254 ranging from 53 to 116 percent with an average of 79.0 percent.

The precision of the matrix spikes as measured by the RPD between the MS and MSD recoveries ranged from 0 to 62 percent with an average of 13.8 percent for Aroclor 1242, and from 1 to 96 percent with an average of 18.5 percent for Aroclor 1254. While the average RPD is within acceptable limits, the range runs high due to apparently low extraction efficiency for a MS in SDG 38002.

Review of the 20 field duplicate set results indicates that for 17 duplicate sets, acceptable precision was met by either of the following conditions:

- The RPD results were within acceptable limits; or
- The samples replicate through non-detection.

For both of the field duplicate samples (K10117/K10118 and K10123/K10124), submitted for SDG 37978, the detection of Aroclors near or below the quantitation limit in one of the field duplicates but not the other, indicated that the detection limits for these samples may be uncertain. All non-detects for these samples were qualified as estimated. The field duplicate results for samples K10167/K10168 (SDG 38075) have been qualified as estimated with presumptive evidence of presence due to the poor replication between both Aroclor identification and total PCB content.

Of the field duplicates, 18 sets were within-batch duplicates and two were between-batch duplicates. Eleven of the within-batch duplicates showed acceptable precision through non-detection. Two additional duplicates showed non-detection in one sample and near non-detection in the other. The RPD for the within-batch duplicates had detectable Aroclor concentrations which ranged from 20.7 to 133 percent with an average of 63.6 percent. United States Environmental Protection Agency (USEPA) Region V guidance considers differences to be significant when there is more than a factor of 5 difference in the concentrations. This is roughly equivalent to a RPD of 133 percent. Both of the between-batch duplicates showed replication through non-detection.

Surrogate recoveries were outside of acceptable limits for some samples in all SDGs with the exception of SDG 37919. This affected, however, a limited number of samples within each SDG and only 8 percent of the samples overall. Qualifiers were added to the sample results where deemed necessary. The majority of the samples with poor surrogate recovery were re-extracted and re-analyzed. When re-extractions exceeded holding time requirements, qualifiers were added to the re-extracted sample results.

Surrogate recoveries for tetrachloro-meta-xylene (TCMX) ranged from 2 to 487 percent with an average of 67.7 percent. Recoveries for decachlorobiphenyl (DCB) ranged from 3 to 695 percent with an average of 83.3 percent. The wide range of recoveries is due to both the matrix effects and the extraction efficiency, with the inclusion of both original extraction and re-extraction results.

For all SDGs, no target compounds were detected in the method or rinse blanks with the exception of SDG 37849. Aroclor 1242 was detected in the method blank associated with the samples re-extracted due to poor surrogate recovery; however, this Aroclor was not detected in any of the samples that were re-analyzed.

Other than those deviations specifically mentioned in this summary, the overall data quality for precision and accuracy are within the guidelines listed in the analytical method.

2.5.2 Precision and Accuracy Assessment for TCL Volatile and Semi-Volatile Organics, TCL Pesticides, and TAL Laboratory Analyses

Data packages for the TCL volatile, semi-volatile, pesticide, and TAL analyses of the floodplain soil samples were reviewed and evaluated for analytical precision and accuracy. Two SDGs, designated as 37880 and 38393, were reviewed and evaluated. Table 2-3 presents the SDGs and the associated samples.

Laboratory analyses precision was assessed by comparing the analytical results between MS and MSD samples for organic and inorganic analyses, and by comparing laboratory duplicate analyses for inorganic analyses. Field duplicates were also used to assess the overall precision of laboratory analyses.

To assess the accuracy of the analytical method, MS data were examined in conjunction with other indicators of accuracy such as surrogate spike recovery data and blank contamination for organic analyses, and laboratory control sample data and blank contamination for inorganic analyses.

An overall summary of the data's precision and accuracy is presented below. A summary, that includes MS/MSD recovery data, field duplicate RPD calculation results, surrogate spike recovery data and blank contamination detection, of the volatile organics analyses followed by semi-volatile organics and pesticides analyses is presented below. An inorganic data summary, that includes MS/MSD recovery data and laboratory duplicate results, field duplicate RPD calculation results, laboratory control sample results, and blank contamination detection, is presented last.

TCL Volatile Organic Analyses

All percent recoveries and RPDs between recoveries were within acceptable control limits for both SDGs with the exception of a low recovery for 1,1-dichloroethene in both the MS and the MSD for SDG 38393. Data for this compound have been qualified as estimated in the sample K10204 based on the deviation.

Recoveries for MS compounds overall ranged from 49 to 116 percent with an average of 95.0 percent. RPDs for the MS ranged from 0 to 4 percent with an average of 2.3 percent.

Review of the field duplicate results indicate that for both SDGs acceptable precision was met by either one of the following conditions:

- The RPD results were within acceptable limits; or
- The samples replicate through non-detection.

All surrogate recoveries were within acceptable limits for both SDGs with recoveries ranging from 4 to 116 percent with an average of 95.7 percent.

No volatile compounds were detected in the method blank for SDG 38393; however, acetone was detected in one method blank for SDG 37880, resulting in a qualification of non-detect for acetone in the associated sample.

TCL Semi-Volatile Organic Analyses

All MS/MSD percent recoveries and RPDs between recoveries were within acceptable control limits with the exception of pentachlorophenol for SDG 37880 and pyrene for SDG 38393; however, no qualifications were deemed necessary. MS recoveries ranged from 51 to 118 percent with an average of 75.4 percent. The RPDs for the MS ranged from 0 to 46 percent with an average of 14.5 percent.

For the field duplicate results in SDG 37880, the samples replicate through non-detection with the exception of pyrene; however, since pyrene is present in sample K10172 at a concentration approaching the compound detection limit, the lack of detection in the duplicate sample (K10171) is not deemed indicative of a systematic problem. Therefore, no qualifications were applied to the data. For SDG 38393, the samples replicate through the presence of several polynuclear aromatic hydrocarbons (PAH) compounds. Since all of the compounds are present in the samples at concentrations below the compound quantitation limit, the calculation of an RPD result is inappropriate.

All surrogate recoveries were within acceptable limits for both SDGs and had recoveries ranging from 44 to 107 percent with an average of 75.2 percent.

Target compounds were detected in three method blanks of SDG 37880, and appropriate qualifications were added to the data. The presence of several PAH compounds in the blank (SBLK2A) and the associated samples makes the presence of other low level PAH compounds in the associated samples suspect. No target compounds were detected in the method blank for SDG 38393. For both SDGs, several non-target compound peaks were found in the blanks which should be considered laboratory artifacts for the associated samples.

TCL Pesticide Analyses

All MS/MSD percent recoveries and RPDs between recoveries were within acceptable limits for both SDGs with recoveries ranging from 77 to 114 percent with an average of 98.0 percent. RPDs for the MS ranged from 1 to 5 percent.

Field duplicate RPD results were within acceptable limits for those compounds detected in both original and duplicate samples for both SDGs with the exception of 4,4'-DDE for SDG 37880. RPDs ranged from 29.4 to 62.0 percent with an average of 44.5 percent. Since 4,4'-DDE is present in sample K10171 at a concentration approaching the compound detection limit, the lack of detection in the duplicate sample, K10172, is not deemed indicative of a systematic problem; therefore, no qualifications were added.

All surrogate recoveries were within acceptable limits for both SDGs ranging from 62 to 99 percent with an average of 81.3 percent for TCMX and 88.2 percent for DCB.

No target compounds were detected in any of the blanks of either SDG.

TAL Analyses

Recoveries for antimony in both SDGs and for arsenic and selenium in SDG 37880 were outside the specified control limits in the soil MS. Consequently, the data in the associated samples for these analytes have been flagged as estimated. All other MS recoveries were within the acceptable limits of 75 to 125 percent. The laboratory duplicate RPDs were within acceptable limits for all analytes for both SDGs.

The field duplicate RPDs were within acceptable limits for all analytes for both SDGs.

All recoveries for the laboratory control samples were within the acceptable limits of 80 to 120 percent for both SDGs with the exception of antimony in the aqueous laboratory control sample for SDG 37880. Data for antimony in sample K10095 (SDG 37880) have been qualified as estimated due to the deviation.

For both SDGs, all calibration and preparation blanks were found to be acceptable, with no analytes detected above the contract required quantitation limit (CRQL). No analytes were detected above the CRQL in the rinse blank for SDG 37880. No rinse blank was submitted with the samples for SDG 38393.

Other than those deviations specifically mentioned in this summary, the overall data quality for precision and accuracy is within the guidelines listed in the analytical methods.

Section 3 - Investigation Results

3.1 PCB Analytical Data

The results of PCB analyses and sample elevations are presented in Tables 3-1, 3-2, and 3-3, and Figures 11 through 23, and are briefly described below.

3.1.1 Floodplain Soil Transect Samples

Sampled locations along individual transects ranged in elevation from low-lying marshlands to steeper former reservoir banks and upland areas near or above the 100-year floodplain limit. As a result of field immunoassay tests to determine the extent of PCB concentrations within the floodplain (see Section 2), transect KF4 was extended outward from the original plan. This transect was the only one affected by PCB tests performed in the field. The immunoassay results are included in Table 3-1.

3.1.1.1 Portage Creek Floodplain Soils - PCB Results

Reported PCB concentrations in four of the five surficial soil (0- to 6-inches) samples at transect PF1 ranged from 0.64 to 2.0 mg/kg. The reported PCB concentration in the fifth surficial soil sample, PF1-2A, was 32 mg/kg. As shown in Figure 11 this station is located towards the center of the low-lying area. Surface elevations of sampling locations ranged from 761.1 feet to 762.6 feet. Sample location PF1-2A, which yielded the sample with the highest PCB concentrations, had a surface elevation of 761.5 feet.

PCB were largely absent in the floodplain transect sampled at Upjohn Park (Figure 12). PCB were not detected at stations PF2-3, PF2-4, and PF2-5. PCB were detected at station PF2-2 at a concentration of 0.025 mg/kg in the 6- to 12-inch interval. PF2-1, located near the top of the channel bank (Figure 12), had detectable PCB concentrations in all sample intervals, with 2.1 mg/kg at the 0- to 6-inch depth (PF2-1A), 2.0 mg/kg in the 6- to 12-inch depth (PF2-1B) and 1.7 mg/kg in the 12- to 24-inch depth (PF2-1C). PF2-1 is located on the creek edge with a surface elevation of 1.3 to 1.9 feet lower than that of the other sample locations along the transect. PCB data for the Portage Creek floodplain samples are shown in Table 3-2.

3.1.1.2 Kalamazoo River Floodplain Soils Upstream of Lake Allegan - PCB Results

The results for transect KF1 in Verburg Park, Kalamazoo, are presented in Table 3-2 and Figure 13. PCB were detected in surficial soils at the three sample locations along transect KF1 which were closest to the river. Reported PCB concentrations in these samples ranged from 0.026 to 0.49 mg/kg. The highest PCB concentrations (0.47 and 0.49 mg/kg) were associated with the lowest surface elevations. Reported PCB concentrations in subsurface soils at these three locations ranged from non-detectable to 1.0 mg/kg in the 0- to 6-inch interval from KF1-1. PCB concentrations in all other samples were reported as non-detectable with the exception of 0.034 mg/kg in the 6- to 12-inch interval. Location KF1-3 which had a reported PCB concentration in the 0- to 6-inch

interval of 0.49 mg/kg was located less than 10 feet from the edge of an embayment of the Kalamazoo River (Figure 13).

The results of soil sample analyses for transect KF2 located South of D Avenue in Cooper Township are presented in Table 3-2 and Figure 14. PCB were detected in the samples collected at the river's edge (KF2-1) in concentrations ranging from 0.25 mg/kg in the 12- to 24-inch interval to 3.0 mg/kg in the 0- to 6-inch interval. Soils at this location were wet. At other locations along transect KF2, PCB (if detected at all) were all at reported concentrations less than or equal to 0.15 mg/kg. The concentration of 0.15 mg/kg was reported for the 0- to 6-inch interval from KF2-7 which appeared to field staff as fill material.

The results for soil samples collected from transect KF3 in Brookside Park, Otsego are presented in Table 3-2 and Figure 15. Soils collected at the first four locations along the transect (KF3-1 through KF3-4) had 0- 6-inch interval PCB concentrations in the range of 0.76 to 2.0 mg/kg. These locations were in a swampy area with wet, peat-like soils. The highest PCB concentration was associated with KF3-4, which was located on the edge of a small tributary. Elsewhere along the transect, at higher elevations, PCB were not detected with one exception: PCB were reported at a concentration of 0.42 mg/kg in the 0- to 6-inch interval of sample KF3-8. This sample, which was described as a brown, fine to medium sand, had the appearance of fill material to field staff. The location is approximately 14 feet above the 100-year floodplain.

The results for soil samples collected from transect KF4, which extends from the former Otsego Impoundment, are presented in Table 3-2 and Figure 16. Reported PCB concentrations in samples from the three locations within the former impoundment (KF4-1 through KF4-3) ranged from 1.3 to 14 mg/kg. Outside of the former impoundment, PCB were not detected with one exception: a concentration of 0.038 mg/kg was reported for the 0- to 6-inch interval from KF4-5.

The results for soil samples collected from KF5, which is located downstream of the former Trowbridge Dam, are presented in Table 3-2 and Figure 17. At all but the two lowest elevation sample locations, PCB concentrations, when detected, were less than or equal to 0.15 mg/kg. At KF5-1, located nearest to the river, PCB concentrations ranged from 0.32 mg/kg in the 12- to 24-inch interval to 1.6 mg/kg in the 0- to 6-inch interval. At location KF5-4, PCB concentrations ranged from 0.35 mg/kg in the 6- to 12-inch interval to 2.8 mg/kg in the 0- to 6-inch interval. Soils at location KF5-4 were under six inches of standing water and were described as black silt and organic matter.

3.1.1.3 Kalamazoo River Floodplain Soils Downstream of Lake Allegan - PCB Results

Three floodplain soil transects were sampled in the marshes below Lake Allegan. Lake Allegan is a boundary that separates two hydrogeologically distinct areas. The marshes below Lake Allegan are mostly natural wetlands with deep hydric soils that are seasonally flooded and therefore may act as depositional areas more than the floodplain upstream of Lake Allegan.

Each of the marsh transects contained five sampling stations where soil samples were collected and analyzed for PCB. The analytical results are listed in Table 3-2.

Transect KF6, the uppermost Koopman Marsh Transect (Figure 18), included five individual sampling stations. Each station had detectable PCB in at least the 0- to 6-inch depth. The concentrations in the 0- to 6-inch depth ranged from 0.092 mg/kg at KF6-3A to 3.4 mg/kg at KF6-5A. Two stations (KF6-1 and KF6-5) showed detectable PCB concentrations below the 0- to 6-inch depth: 0.036 mg/kg at KF6-1B, 0.15 mg/kg at KF6-5B, and 0.17 mg/kg at KF6-5C.

The second Koopman Marsh transect KF7 (Figure 19), located upstream of Swan Creek, displayed a varied distribution of PCB. Detectable concentrations ranged from 0.027 mg/kg at KF7-3B to 0.74 mg/kg at KF7-5A. No PCB were detected at KF7-1. The remaining three stations contained PCB in only the 0- to 6-inch depth.

PCB at the Swan Creek marsh transect KF8 (Figure 20) were detected at concentrations less than 1.0 mg/kg. Each of the five sampling stations contained PCB in the 0- to 6-inch depth, ranging from 0.26 mg/kg at KF8-1A to 0.65 mg/kg at KF8-5A. No PCB were detected in the subsurface samples for KF8-1, KF8-2, or KF8-3; the only other PCB detected were 0.13 mg/kg at KF8-4B and 0.087 mg/kg for KF8-5B.

3.1.2 Ottawa and Pottawatamie Marsh Cores - PCB Results

Three cores (OM-1, OM-2, and OM-3) were taken from Ottawa Marsh (Figures 21 and 22). PCB were detected in all three cores within the 0- to 2-inch and 2- to 6-inch depths. No PCB concentrations were greater than 1.0 mg/kg. PCB were detected at OM-1 at 0.15 mg/kg. OM-1A and OM-1B had respective concentrations of 0.83 and 0.22 mg/kg. The other measurable PCB concentrations were 0.67 mg/kg at OM-2A, 0.20 mg/kg at OM-2B, 0.44 mg/kg at OM-3A, and 0.037 mg/kg at OM-3B. PCB analytical results for Ottawa Marsh and Pottawatamie Marsh are listed in Table 3-3.

The three sediment cores (PM-1, PM-2, and PM-3) taken from Pottawatamie Marsh (Figure 23) exhibited trends similar to those collected from Ottawa Marsh, although one concentration greater than 1 mg/kg was measured at PM-2B (1.1 mg/kg). Other reported PCB concentrations in the PM-2 core were 0.96 mg/kg in the 0- to 2-inch interval and 0.16 mg/kg in the bottom interval. A duplicate sample of PM-2C also showed a PCB level of 0.80 mg/kg. The other two cores showed lower PCB levels, from 0.38, 0.21, and 0.14 mg/kg in PM-1A, PM-1B, and a PM-1B duplicate sample, to 0.68 and 0.099 mg/kg at PM-3A and PM-3B, respectively.

3.2 TCL/TAL Analytical Data - Floodplain Transects

The Kalamazoo River floodplain samples above Lake Allegan which were selected for TCL/TAL analysis are KF1-3, KF2-3, KF3-1, KF4-4, and KF5-2. The results of TCL volatiles, semi-volatiles, pesticides, and TAL constituents analyses and sample elevation are presented in Tables 3-4 to 3-7 and are summarized below. Reported TCL detections for each transect are summarized in Figures 24-28.

3.2.1 Floodplain Soil Transect - TCL Volatiles Results

Four detections of TCL volatiles were reported for floodplain soils. None were detected at transects KF1 or KF2. Acetone was reported at a concentration of 0.049 mg/kg in sample KF3-1A. Toluene concentrations of 0.0020 mg/kg were reported for both KF4-4B and KF5-2A. Toluene was reported at 0.0030 mg/kg in KF5-2B. These data are summarized in Table 3-4.

3.2.2 Floodplain Soil Transect - TCL Semi-Volatiles Results

TCL semi-volatiles were detected in samples from four of the five transects. No TCL semi-volatiles were detected in samples from transect KF4 as well as the KF2-3B sample. Samples and detected parameters are listed in Table 3-5.

Seventeen TCL semi-volatile compounds were detected in the KF1-3A sample and 11 were detected in the KF1-3B sample as well. The duplicate sample KF1-3B contained nine TCL semi-volatiles. Twelve of the 17 TCL semi-volatile compounds reported detected in the KF1-3A sample are PAHs. The PAH concentrations range from non-detect to an estimated concentration of fluoranthene of 0.46 mg/kg. The detectable concentrations reported include: naphthalene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene. The aromatic hydrocarbon 2-methyl-naphthalene was reported at an estimated concentration of 0.0040 mg/kg. Carbazole, di-n-butyl-phthalate, butyl benzyl phthalate, and bis(2-ethyl hexyl)phthalate were reported at estimated concentrations of 0.041 mg/kg, 0.050 mg/kg, 0.063 mg/kg, and 0.26 mg/kg respectively. The sample KF1-3B was reported to contain only PAH semi-volatiles ranging from non-detect to an estimated concentration of fluoranthene of 0.15 mg/kg. Estimated concentrations were reported for the following PAHs: phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene. Duplicate sample KF1-3B was reported to contain PAH semi-volatiles with a maximum estimated concentration of 0.066 mg/kg (fluoranthene). Detectable concentrations for the duplicate sample were reported for the following PAHs: phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene.

The only sample from transect KF2 reported to contain semi-volatiles is the sample KF2-3A which was reported to have detected concentrations for six PAH compounds. The highest estimated concentration reported was 0.14 mg/kg for benzo(b)fluoranthene. Estimated concentrations were reported for fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, and benzo(a)pyrene.

The sample KF3-1A was reported to have estimated concentrations of seven TCL semi-volatiles. Five of the seven TCL semi-volatiles are PAHs with the highest estimated concentration reported as 0.62 mg/kg for fluoranthene. Estimated concentrations were reported for phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, and chrysene. Di-n-butyl-phthalate, and bis(2-ethyl hexyl)phthalate were reported at estimated concentrations of 0.20 mg/kg and 0.32 mg/kg respectively. The sample KF3-1B

was reported to contain two TCL semi-volatiles both of which are PAHs: fluoranthene at 0.027 mg/kg and pyrene at 0.25 mg/kg. Both reported concentrations are estimates.

No TCL semi-volatiles were detected in KF4.

Soil samples from transect KF5 contained detectable levels of TCL semi-volatiles. Sample KF5-2A was reported to have six TCL semi-volatile compounds detected, all of which were PAHs. The highest reported concentration detected was fluoranthene at an estimated concentration of 0.12 mg/kg. Estimated concentrations were also reported for phenanthrene, pyrene, benzo(a)anthracene, chrysene, and benzo(b)fluoranthene. Only five TCL semi-volatiles reported were detected in sample KF5-2B. The highest reported concentration was 0.047 mg/kg for fluoranthene. The remaining PAHs reported as detected include pyrene, benzo(a)anthracene, chrysene, and benzo(b)fluoranthene.

All of the TCL semi-volatile concentration values for all the mentioned transect samples are reported as estimated concentrations since they are detected below the reported quantitation limit. Where detected, the surface concentrations of TCL semi-volatiles were higher than the subsurface concentrations.

The overall pattern of the TCL semi-volatiles detected among the four sites is variable. The most commonly appearing chemicals are fluoranthene, pyrene, benzo(a)anthracene, and chrysene which were detected at all four of the transects where TCL semi-volatiles were detected.

3.2.3 Floodplain Soil Transect - TCL Pesticides Results

Nine TCL pesticides were detected in the TCL analyses. Those detected were generally present in low concentrations ranging from 0.0023 mg/kg endrin in KF5-2A to 0.022 mg/kg aldrin in KF3-1A. No pesticides were detected in KF2-3A, KF2-3B, KF4-4A, KF4-4B, and KF5-2B. Endrin (0.0023 mg/kg) and endosulfan 1 (0.0027 mg/kg) were the only pesticides detected at KF5-2A. Five and six pesticides, respectively, were observed at stations KF1 and KF3 within the 0- to 6-inch depth, and only two were observed in the 6- to 12-inch depth (aldrin, 4,4'-DDE), each at lower levels than observed at the surface. The detected TCL pesticides concentrations for the Kalamazoo floodplain samples are listed in Table 3-6.

3.2.4 Floodplain Soil Transects - TAL Results

TAL constituents were detected at various levels in every sample. Some of the higher results of these naturally occurring constituents are noted in the following. Lead and mercury concentrations were highest in the samples collected from KF3-1 which was located in a swampy area near the river's edge in Otsego. These samples also had the highest reported concentrations of zinc at 458 and 330 mg/kg. Lead concentrations of 357 and 455 mg/kg were reported for samples KF3-1A and KF3-1B respectively. Respective mercury concentrations reported for these samples are 1.3 and 2.0 mg/kg. Lead was also reported at a concentration of 174 mg/kg in sample KF1-3A collected near the River's edge in Verburg Park, Kalamazoo. Arsenic was reported at estimated concentrations of 22 and 32

mg/kg in samples KF2-3B and KF2-3A respectively. The complete analytical results of the TAL analysis are presented in Table 3-7.

3.3 TCL/TAL Analytical Data - Marsh Core Samples

In addition to PCB, full TCL/TAL analyses were performed on two selected marsh sites. The analyses included the 2- to 6-inch cores (B samples) for OM-1 in Ottawa Marsh and PM-1 in the Pottawatamie Marsh. The results of TCL/TAL constituents analyses are presented in Tables 3-8 to 3-11. In addition, the reported TCL detections from these cores are shown in Figures 29 and 30.

3.3.1 Marsh Core - TCL Volatiles Results

No TCL volatiles were detected in the Ottawa Marsh sample. The Pottawatamie Marsh station PM-1B had a reported acetone concentration of 0.031 mg/kg in the original sample and 0.025 mg/kg in a duplicate sample. Results of the marsh core TCL volatile analyses are given in Table 3-8.

3.3.2 Marsh Core - TCL Semi-Volatiles Results

TCL semi-volatiles detected in the marsh core samples are presented in Table 3-9. The Pottawatamie Marsh core PM-1 showed no detectable semi-volatiles except a 0.032 mg/kg concentration of pyrene detected in a duplicate sample of PM-1B. The Ottawa Marsh core sample OM-1 had detectable estimated concentrations of fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i) perylene. The estimated concentrations range from 0.049 mg/kg of benzo(k)fluoranthene and dibenzo(a,h)anthracene to 0.095 mg/kg of benzo(b)fluoranthene.

3.3.3 Marsh Core - TCL Pesticides Results

TCL pesticides occurred in three samples. Aldrin and 4,4'-DDE were detected in both OM-1B and PM-1B. Aldrin was detected at 0.0023 mg/kg and 0.0039 mg/kg (0.0029 mg/kg in duplicate sample) in OM-1B and PM-1B, respectively. 4,4'-DDE was detected at 0.0062 mg/kg and 0.0039 mg/kg in OM-1B and PM-1B, respectively. OM-1B also showed an endrin aldehyde concentration of 0.0046 mg/kg and an alpha-chlordane concentration of 0.0017 mg/kg. All reported pesticide concentrations are estimated values. Other pesticides were not present in detectable amounts. Complete pesticides data for the marsh core samples are presented in Table 3-10.

3.3.4 Marsh Core - TAL Results

TAL data for the marsh core samples are presented in Table 3-11. As expected, given the natural occurrence of these constituents most of these analytes were in measurable concentrations. Some of the higher results are noted in the following. Lead, mercury, and arsenic concentrations were reported in sample OM-1B at respective concentrations of 168, 1.1, and 12 (estimated) mg/kg.

3.4 TOC Data

The surface sample (0- to 6-inch depth) of each sampling location of the floodplain transects was analyzed for TOC. These data are summarized below and presented in Table 3-12.

3.4.1 Portage Creek Floodplain Transect Soils - TOC Results

TOC at the five random sampling points near Portage Creek off Reed Street ranged from 4.4 percent (by weight) at PF1-1 to 10 percent at PF1-2. The other sites had TOC content of 8.5 percent at PF1-3, 7.0 percent at PF1-4, and 9.8 percent at PF1-5.

TOC content of soil from the Upjohn Park transect was fairly consistent across the transect. Values were from PF2-1 to PF2-5: 4.7 percent, 5.7 percent, 4.1 percent, 2.6 percent, and 3.2 percent.

3.4.2 Kalamazoo River Floodplain Transect Soils - TOC Results

The percent TOC of the Kalamazoo floodplain soil varied greatly. Individual samples ranged from as high as 36 percent at KF1-2 to as little as 0.4 percent at KF3-8. In general, TOC content is greatest at or near the river and in the middle of the transect.

Transect KF1 at Verburg Park displayed a wide range of TOC content, from 1.3 percent at KF1-6A to 36 percent at KF1-2. KF1-1 (7.7 percent TOC) and KF1-2 (36 percent TOC) had the greatest TOC values; the rest of the samples were between 1.3 and 3.7 percent TOC.

Transect KF2 exhibited high TOC content throughout the sampling stations. Only two points were below 10 percent TOC, KF2-8 at 3 percent and KF2-2 at 5.6 percent. The remaining TOC contents included 11 percent at KF2-1, 19 percent at KF2-3, 31 percent at KF2-4, 22 percent at KF2-5, 30 percent at KF2-6, and 23 percent at KF2-7.

The TOC content at KF3 is greatest near the Kalamazoo River and decreases with distance from the river and elevation of the sample. The TOC content of KF3-1, KF3-2, KF3-3, and KF3-4 ranged from 12 percent to 24 percent and the remaining samples were all 2.3 percent TOC or less.

Transect KF4 shows trends in TOC content similar to those of KF3. The three sites closest to the river (KF4-1, KF4-2, and KF4-3) had TOC contents of 16 percent, 12 percent, and 8.5 percent, respectively. The remaining five sampling points ranged in TOC content from 0.9 percent to 2.5 percent. The TOC distribution across Transect KF4 is also likely to be attributable to topography and relief.

The TOC content of samples in Transect KF5 ranges from 2.1 percent at KF5-8 to 15 percent at KF5-4. Other values are 7.6 percent at KF5-1, 4.3 percent at KF5-2, 6.0 percent at KF5-3, 8.8 percent at KF5-5, 5.1 percent at KF5-6, and 6.9 percent at KF5-7.

3.4.3 Koopman and Swan Creek Marsh Floodplain Transect Soils - TOC Results

The three floodplain transects below Lake Allegan (KF6, KF7, and KF8) generally had lower TOC content than the soil samples from above the lake, and were more consistent between and within transects. Other than KF6-5, the TOC range of all samples was between 1.8 percent and 8.7 percent. The reported TOC content of KF6-5 is 26 percent.

Section 4 - Findings

The purpose of the floodplain soils investigation was to assess the potential of past flooding events having transported PCB in significant concentrations to the floodplain. Sampling employed transects focused on floodprone areas, but also extended to higher elevations so that if significant contamination was found, an analysis of the relationships among PCB concentration, elevation, and historical flood frequency might be evaluated. The evaluation of the potential significance of PCB levels in various environmental media is one of the objectives of the human health and ecological risk assessment activities being conducted in conjunction with the RI/FS of the Site.

The results of the floodplain sampling and analyses can be screened for potential significance against PCB levels of 1.0 mg/kg and 10 mg/kg for a perspective on potential human health risk. MDNR has developed the 1.0 mg/kg Type B Criterion pursuant to Act 307 (Howard, 1993). This is the level calculated to be protective of a hypothetical resident who would consume 90 milligrams per day of soil containing PCB for 70 years.

Screened against these levels, the sampling results for Kalamazoo River floodplain transects indicate that flooding events have not transported PCB to floodplain soils at levels that would present a risk to human health. Looking first at the results for samples collected upstream of Lake Allegan, of the 92 floodplain soil analyses for PCB (exclusive of the sediments within the former Otsego Impoundment), 62 percent were reported as nondetectable and 28 percent as less than or equal to 1.0 mg/kg. The remaining 10 percent are accounted for by 7 samples with reported PCB concentrations in the range of 1.0 to 2.0 mg/kg and two other observations of 2.8 and 3.0 mg/kg. The PCB concentrations greater than 1.0 mg/kg are associated with either soils immediately adjacent to the river's edge, or continually wet or submerged soils (as in the case of the 2.8 mg/kg observation along KF5). These soils have a characteristically high organic carbon content, ranging from 7.6 to 24 percent. Downstream of Lake Allegan, only two of 83 samples analyzed were reported to have a PCB concentration greater than 1.0 mg/kg. One of these samples from the Pottawatamie Marsh had a reported PCB concentration of 1.1 mg/kg. The other sample, which came from the Koopman Marsh had a reported PCB concentration of 3.4 mg/kg and a high TOC content of 26 percent indicative of these peat-like, marshy soils.

The highest PCB levels found along the Kalamazoo River were found in the exposed sediments of the former Otsego Impoundment. The maximum reported PCB concentration was 14 mg/kg for the 6- to 12-inch interval. The distribution of PCB in these soils and those of the former Plainwell and Trowbridge impoundments is the subject of a separate sampling effort within the RI/FS and will be reported in a technical memorandum during spring 1994.

The results of the Portage Creek floodplain samples collected along the PF2 transect are similar to those for the Kalamazoo River. PCB were detected at levels greater than 1.0 mg/kg only at the edge of creek. The maximum reported PCB concentration for a sample at that location was 2.1 mg/kg. For the other 10 samples collected along that transect, PCB were not detected except for a trace level (0.025 mg/kg) in one subsurface soil.

Five random samples were collected from the floodplain of Portage Creek in the low-lying area on Portage Paper, Inc. property. The general sampling area lies within an undeveloped lot supporting a dense growth of woody and herbaceous vegetation. Presently, the lot supports no structured activity. Adjacent land uses include urban residential and industrial development. Portage Creek borders the lot to the east and north. The Portage Paper Mill is located at the southern border of the lot on Reed Avenue. A set of railroad tracks bound the area to the east. Residential areas border Portage Creek to the north and east and the railroad tracks to the west. All of the sampled locations were well below the 10-year floodplain elevation. Samples from four of five sampled locations contained PCB concentrations ranging from 0.62 to 2.0 mg/kg. However, a fifth sample, PF1-2, contained a reported PCB concentration of 32 mg/kg in the 0- to 6-inch interval. The surface elevation of this sampled location was lower than all but one of the other sampled locations. Additional sampling, analyses, and surveying will be proposed to further address the distribution of PCB in this area. This investigation will include a review of available records to address the potential that these soils are located in a former channel of Portage Creek which may have meandered in this area.

Finally, as noted previously, there was one low-level PCB result that appears to be unrelated to the Kalamazoo River. The low level of PCB found in sample KF3-8A (0.42 mg/kg) taken from Brookside Park in Otsego cannot be explained by flooding of the Kalamazoo River since it is approximately 14 feet above the 100-year floodplain. The soils sampled at this location appeared to field staff as fill.

The results of screening selected samples for TCL/TAL constituents show the presence of a number of pesticides and polycyclic aromatic hydrocarbons and the apparent elevation of certain metals. Exceedences of MDNR's Type B Criteria for direct contact include:

- lead in sample KF3-1B and chrysene and benzo(a)anthracene in sample KF3-1A from the River's edge of the Brookside Park transect; and
- benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a) pyrene in sample KF1-3A from the River's edge of the Verburg Park transect.

Much like PCB concentrations for the Kalamazoo River floodplain soils, the concentrations of these other analytes only slightly exceed the Type B criteria when they exceed them at all.

There are a variety of potential sources of the TCL/TAL constituents found in the floodplain soils. The pesticide concentrations may be attributable to agricultural sources in the watershed. The PAHs noted above have natural and anthropogenic sources and are typically associated with fossil fuels. Consequently, there would appear to be numerous potential sources of these compounds to the Kalamazoo River. Similarly, lead and other metals have a number of potential sources. Potential sources of lead include urban runoff during the period when leaded fuels were more widely used.

The foregoing screening evaluation using generic human-health based criteria is not intended to replace site-specific risk assessment but rather to provide a basis for current decision-making regarding the need for further investigation. For both human health and ecological risk assessments, additional site-specific information regarding actual and potential usage of the floodplain will be considered. In addition, the

ecological assessment activities are expected to develop site-specific soil PCB concentrations intended to be protective of sensitive ecological receptors.

The results of this sampling indicate that:

- flooding of the Kalamazoo River has not transported PCB to the floodplain in significant amounts;
- additional investigation of the distribution of PCB in the low-lying area adjacent to Portage Creek in the vicinity of the PF1 samples is appropriate; and
- the focus of further RI/FS activities to address PCB in the floodplain is appropriately placed on the floodplain which comprise the exposed sediments of the three former impoundments.

Section 5 - References

Blasland & Bouck Engineers, P.C., Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site - Description of the Current Situation, (Syracuse, NY: May 1992).

Blasland & Bouck Engineers, P.C., Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Remedial Investigation/Feasibility Study Work Plan, (Syracuse, NY: July 1993).

FEMA, Flood Insurance Study - City of Allegan, Michigan, (May 1989).

FEMA, Flood Insurance Study - City of Kalamazoo, Michigan, (November 1984). Note: Maps Revised September 30, 1992.

FEMA, Flood Insurance Study - Township of Kalamazoo, Michigan, (December 1981).

GZA - Donohue, Interim Remedial Action for Portions of the Kalamazoo River System - Conceptual Design Technical Memorandum (Contract No. 3645 to MDNR), (Livonia, MI: August 1990).

Howard, Alan J., MERA Operational Memorandum #8, Revision 2 - Type B Criteria, July 16, 1993.

U.S. Geological Survey (USGS), Fennville, Michigan, Topographic Quadrangle (1981).

USGS Hamilton West, Michigan, Topographic Quadrangle (1981).

USGS, "Map of Flood-Prone Areas," Maps for Kalamazoo, Kalamazoo NE, Portage, Otsego, and Gobles Quadrangles, (Lansing, MI: 1973, 1974, and 1976).

USGS, Millgrove, Michigan, Topographic Quadrangle (1981).

USGS, Saugatuck, Michigan, Topographic Quadrangle (1981).

USGS, Water Resources Data, Michigan Water Year 1989, USGS Water Data Report MI 89-I (Lansing, MI: 1990).

Tables

TABLE 2-1

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION
USEPA CONTRACT LABORATORY PROGRAM-TARGET COMPOUND LIST/TARGET ANALYTE LIST

TARGET COMPOUND LIST		
VOCs		
acetone	chloromethane	methylene chloride
benzene	dibromochloromethane	4-methyl-2-pentanone
bromodichloromethane	1,1-dichloroethane	styrene
bromoform	1,2-dichloroethane	1,1,2,2-tetrachloroethane
bromomethane	1,1-dichloroethene	tetrachloroethene
2-butanone	1,2-dichloroethene (total)	toluene
carbon disulfide	1,2-dichloropropane	1,1,1-trichloroethane
carbon tetrachloride	cis-1,3-dichloropropene	1,1,2-trichloroethane
chlorobenzene	trans-1,3-dichloropropene	trichloroethene
chloroethane	ethylbenzene	vinyl chloride
chloroform	2-hexanone	xylenes (total)
SVOCs		
acenaphthene	dibenz(a,h)anthracene	hexachloroethane
acenaphthylene	dibenzofuran	indeno(1,2,3-cd)pyrene
anthracene	di-n-butylphthalate	isophorone
benzo(a)anthracene	1,2-dichlorobenzene	2-methylnaphthalene
benzo(b)fluoranthene	1,3-dichlorobenzene	2-methylphenol
benzo(k)fluoranthene	1,4-dichlorobenzene	4-methylphenol
benzo(g,h,i)perylene	3,3'-dichlorobenzidine	naphthalene
benzo(a)pyrene	2,4-dichlorophenol	2-nitroaniline
4-bromophenyl phenyl ether	diethyl phthalate	3-nitroaniline
butyl benzyl phthalate	2,4-dimethylphenol	4-nitroaniline
carbazole	4,6-dinitro-2-methyl phenol	nitrobenzene
4-chloroaniline	dimethyl phthalate	2-nitrophenol
bis(2-chloroethoxy)methane	2,4-dinitrophenol	4-nitrophenol
bis(2-chloroethyl)ether	2,4-dinitrotoluene	n-nitrosodiphenylamine
4-chloro-3-methyl phenol	2,6-dinitrotoluene	n-nitroso-di-n-propylamine
2-chloronaphthalene	di-n-octyl phthalate	pentachlorophenol
2-chlorophenol	bis(2-ethlhexyl)phthalate	phenanthrene
4-chlorophenyl phenyl ether	fluoranthene	phenol
2,2'-oxybis(1-chloropropane)	fluorene	pyrene
chrysene	hexachlorobenzene	1,2,4-trichlorobenzene
	hexachlorobutadiene	2,4,5-trichlorophenol
	hexachlorocyclopentadiene	2,4,6-trichlorophenol

(See References on Page 2)

KB60002191

TABLE 2-1
(Cont'd.)

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION
USEPA CONTRACT LABORATORY PROGRAM-TARGET COMPOUND LIST/TARGET ANALYTE LIST

Pesticides/PCB Compounds		
aldrin	beta-BHC	endosulfan I
alpha-BHC	gamma-BHC (lindane)	endosulfan II
Aroclor - 1016*	delta-BHC	endosulfan sulfate
Aroclor - 1221*	alpha-chlordane	endrin
Aroclor - 1232*	gamma-chlordane	endrin aldehyde
Aroclor - 1242*	4,4'-DDD	endrin ketone
Aroclor - 1248*	4,4'-DDE	heptachlor
Aroclor - 1254*	4,4'-DDT	heptachlor epoxide
Aroclor - 1260*	dieldrin	methoxychlor
		toxaphene
TARGET ANALYTE LIST		
Metals/Other Compounds		
aluminum	cobalt	nickel
antimony	copper	potassium
arsenic	cyanide	selenium
barium	iron	silver
beryllium	lead	sodium
cadmium	magnesium	thallium
calcium	manganese	vanadium
chromium	mercury	zinc

References:
TCL: USEPA, 1991a.
TAL: USEPA, 1991b.
*PCB were not included in the TCL/TAL analyses but were analyzed separately.

Table 2-2

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION SAMPLE SUMMARY

Sample Location[1]	Type of Information Collected/Analysis Performed[2]	No. of Sampling Stations	No. of Samples	RI Data Collection Objectives[3]
Off Reed Street (adjacent to Portage Creek) (PF1-1 through PF1-5)	• PCB • lithology description • position/elevation	1 transect with 5 sampling stations	10	1,2
	• TOC		5	
Upjohn Park (adjacent to Portage Creek) (Transect PF2)	• PCB • lithology description • position/elevation	5 random sampling stations	12	
	• TOC		5	
Verburg Park (Transect KF1)	• PCB • lithology description • position/elevation	1 transect with 8 sampling stations	18	
	• TOC		8	
	• CLP TCL/TAL		2	
South of D Avenue (Transect KF2)	• PCB • lithology description • position/elevation	1 transect with 8 sampling stations	18	
	• TOC		8	
	• CLP/TCL/TAL		2	
Brookside Park (Transect KF3)	• PCB • lithology description • position/elevation	1 transect with 8 sampling stations	18	
	• TOC		8	
	• CLP TCL/TAL		2	

KB000213

TABLE 2-2
(Cont'd.)

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION SAMPLE SUMMARY

Sample Location[1]	Type of Information Collected/Analysis Performed[2]	No. of Sampling Stations	No. of Samples	RI Data Collection Objectives[3]
River Road, Upstream of Otsego Dam (Transect KF4)	• PCB • lithology description • position/elevation	1 transect with 8 sampling stations	18	1,2
	• TOC		8	
	• CLP TCL/TAL		2	
Downstream of Trowbridge Dam (Transect KF5)	• PCB • lithology description • position/elevation	1 transect with 8 sampling stations	18	
	• TOC		8	
	• CLP TCL/TAL		2	
Koopman Marsh/ Swan Creek Marsh (Transects KF6, KF7, and KF8)	• PCB • lithology description • position/elevation	3 transects with 5 sampling stations	45	1,2
	• TOC		15	
Ottawa Marsh (Marsh Cores OM1, OM2, and OM3)	• PCB	3 cores	14	
	• CLP TCL/TAL		1	
Pottowatamie Marsh (Marsh Cores PM1, PM2, and PM3)	• PCB	3 cores	14	
	• CLP TCL/TAL		1	

00002194

TABLE 2-2
(Cont'd.)

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION SAMPLE SUMMARY

Notes:

[1]Kalamazoo River Segments
[2]Abbreviations used in this table:
PCB = Polychlorinated biphenyls
CLP TCL/TAL = Contract Laboratory Program Target Compound List/Target Analyte List
TOC = Total organic carbon
[3]RI Data Collection Objectives:
1. Characterize nature of wastes at the site.
2. Assess exposure (i.e., support the risk assessment).

TABLE 2-3

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOIL
SAMPLE DELIVERY GROUP SUMMARY

Sample Delivery Group	Sample ID	Matrix	Analysis				
			PCB	Volatiles	Semi-Volatiles	Pesticides	TAL
37849	K10022	Soil	x				
	K10023	Soil	x				
	K10024	Soil	x				
	K10025	Soil	x				
	K10026	Soil	x				
	K10027	Soil	x				
	K10028	Soil	x				
	K10029	Soil	x				
	K10030	Soil	x				
	K10031*	Soil	x				
	K10032	Water (rinse blank)	x				
	K10033	Soil	x				
	K10034	Soil	x				
	K10035	Soil	x				
	K10036	Soil	x				
	K10037	Soil	x				
	K10038	Soil	x				
	K10039	Soil	x				
	K10040	Soil	x				
	K10041	Soil	x				
37852	K10042	Soil	x				
	K10044	Soil	x				
	K10045	Soil	x				
	K10046	Soil	x				
	K10047	Soil	x				
	K10048	Soil	x				
	K10049	Soil	x				
	K10050	Soil	x				

See Note on Page 8

TABLE 2-3

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOIL
SAMPLE DELIVERY GROUP SUMMARY

Sample Delivery Group	Sample ID	Matrix	Analysis				
			PCB	Volatiles	Semi-Volatiles	Pesticides	TAL
37852 (Cont'd.)	K10051*	Soil	x				
	K10052	Soil	x				
	K10055	Soil	x				
	K10056	Soil	x				
	K10057	Soil	x				
	K10058	Soil	x				
	K10059	Soil	x				
	K10060	Soil	x				
	K10061	Soil	x				
	K10062	Soil	x				
	K10063	Soil	x				
37856	K10064	Soil	x				
	K10065	Soil	x				
	K10066	Soil	x				
	K10067	Soil	x				
	K10068	Soil	x				
	K10069	Soil	x				
	K10070*	Soil	x				
	K10071	Soil	x				
	K10072	Water (rinse blank)	x				
	K10073	Soil	x				
	K10074	Soil	x				
	K10075	Soil	x				
	K10076	Soil	x				
	K10077	Soil	x				
	K10078	Soil	x				
	K10079	Soil	x				
	K10080	Soil	x				

See Note on Page 8

TABLE 2-3

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOIL
SAMPLE DELIVERY GROUP SUMMARY

Sample Delivery Group	Sample ID	Matrix	Analysis				
			PCB	Volatiles	Semi-Volatiles	Pesticides	TAL
37856 (Cont'd.)	K10081	Soil	x				
	K10082	Soil	x				
	K10083	Soil	x				
37807	P10001	Soil	x				
	P10002	Soil	x				
	P10003	Soil	x				
	P10004	Soil	x				
	P10005	Soil	x				
	P10006	Soil	x				
	P10007	Soil	x				
	P10008	Soil	x				
	P10009	Soil	x				
	P10010*	Soil	x				
	P10011	Soil	x				
	P10012	Water (rinse blank)	x				
	P10013	Soil	x				
	P10014	Soil	x				
	P10015	Soil	x				
	P10016	Soil	x				
	P10017	Soil	x				
	P10018	Soil	x				
	P10019	Soil	x				
	P10021	Soil	x				
38392	P10190	Soil	x				
	P10191	Soil	x				
	P10192	Soil	x				
	P10193	Soil	x				
	P10194	Soil	x				

See Note on Page 8

KB600219B

TABLE 2-3

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOIL
SAMPLE DELIVERY GROUP SUMMARY

Sample Delivery Group	Sample ID	Matrix	Analysis				
			PCB	Volatiles	Semi-Volatiles	Pesticides	TAL
38392 (Cont'd.)	P10195	Soil	x				
	P10196	Water (rinse blank)	x				
38383	K10207	Soil	x				
	K10208	Soil	x				
	K10209*	Soil	x				
	K10210	Soil	x				
	K10211	Soil	x				
	K10212	Soil	x				
	K10213	Soil	x				
	K10214	Soil	x				
	K10215	Soil	x				
	K10216	Soil	x				
	K10217	Soil	x				
	K10218	Water (rinse blank)	x				
	K10183	Soil	x				
	K10184	Soil	x				
	K10185	Soil	x				
	K10186	Soil	x				
	K10187	Soil	x				
	K10188	Soil	x				
	K10189	Soil	x				
38075	K10167	Soil	x				
	K10168	Soil	x				
	K10170	Soil	x				
	K10173	Soil	x				
	K10174	Soil	x				
	K10175	Soil	x				
	K10176	Soil	x				

See Note on Page 8

TABLE 2–3

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOIL
SAMPLE DELIVERY GROUP SUMMARY

Sample Delivery Group	Sample ID	Matrix	Analysis				
			PCB	Volatiles	Semi–Volatiles	Pesticides	TAL
38075 (Cont'd.)	K10177	Soil	x				
	K10178	Soil	x				
	K10179	Soil	x				
	K10180	Soil	x				
	K10181	Soil	x				
	K10182	Water (rinse blank)	x				
	K10197	Soil	x				
	K10198	Soil	x				
	K10199	Soil	x				
	K10200	Soil	x				
	K10201	Soil	x				
	K10202	Soil	x				
	K10203	Soil	x				
37919	K10084	Soil	x				
	K10085	Soil	x				
	K10086	Soil	x				
	K10087	Soil	x				
	K10088	Soil	x				
	K10090	Soil	x				
	K10091	Soil	x				
	K10092	Soil	x				
	K10093	Soil	x				
	K10094	Soil	x				
	K10095	Water (rinse blank)	x				
	K10096	Soil	x				
	K10097	Soil	x				
	K10098	Soil	x				
	K10099	Soil	x				

See Note on Page 8

TABLE 2-3

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOIL
SAMPLE DELIVERY GROUP SUMMARY

Sample Delivery Group	Sample ID	Matrix	Analysis				
			PCB	Volatiles	Semi-Volatiles	Pesticides	TAL
37919 (Cont'd.)	K10100	Soil	x				
	K10101	Soil	x				
	K10102	Soil	x				
	K10103	Soil	x				
	K10104*	Soil	x				
	K10105	Soil	x				
	K10106	Soil	x				
37978	K10107	Soil	x				
	K10108	Soil	x				
	K10109	Soil	x				
	K10110	Soil	x				
	K10111	Soil	x				
	K10112	Soil	x				
	K10113	Soil	x				
	K10114	Soil	x				
	K10115	Soil	x				
	K10116	Soil	x				
	K10117	Soil	x				
	K10118	Soil	x				
	K10119	Soil	x				
	K10120	Soil	x				
	K10121	Soil	x				
	K10122	Soil	x				
	K10123	Soil	x				
	K10124	Soil	x				
	K10125	Soil	x				
	K10126*	Soil	x				

See Note on Page 8

TABLE 2-3

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOIL
SAMPLE DELIVERY GROUP SUMMARY

Sample Delivery Group	Sample ID	Matrix	Analysis				
			PCB	Volatiles	Semi-Volatiles	Pesticides	TAL
38002	K10147	Soil	x				
	K10148	Soil	x				
	K10149	Soil	x				
	K10150	Soil	x				
	K10151	Soil	x				
	K10152	Soil	x				
	K10153	Soil	x				
	K10155	Soil	x				
	K10156	Soil	x				
	K10157	Soil	x				
	K10158	Soil	x				
	K10159	Soil	x				
	K10160	Soil	x				
	K10161	Soil	x				
	K10162	Soil	x				
	K10163	Soil	x				
	K10164	Water (rinse blank)	x				
	K10165	Soil	x				
	K10166	Soil	x				
	K10169*	Soil	x				
37980	K10127	Soil	x				
	K10128	Soil	x				
	K10129	Soil	x				
	K10130	Water (rinse blank)	x				
	K10131	Soil	x				
	K10132	Soil	x				
	K10133	Soil	x				

See Note on Page 8

TABLE 2-3

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOIL
SAMPLE DELIVERY GROUP SUMMARY

Sample Delivery Group	Sample ID	Matrix	Analysis				
			PCB	Volatiles	Semi-Volatiles	Pesticides	TAL
37980 (Cont'd.)	K10134	Soil	x				
	K10135	Soil	x				
	K10136	Soil	x				
	K10137	Soil	x				
	K10138	Soil	x				
	K10139	Soil	x				
	K10140	Soil	x				
	K10141	Soil	x				
	K10142	Soil	x				
	K10143	Soil	x				
	K10144	Soil	x				
	K10145	Soil	x				
	K10140	Soil	x				
37880	K10019	Soil		x	x	x	x
	K10020	Soil		x	x	x	x
	K10042	Soil		x	x	x	x
	K10043	Soil		x	x	x	x
	K10053	Soil		x	x	x	x
	K10054	Soil		x	x	x	x
	K10088	Soil		x	x	x	x
	K10089	Soil		x	x	x	x
	K10095	Water (rinse blank)		x	x	x	x
	K10154*	Soil		x	x	x	x
	K10171	Soil		x	x	x	x
	K10172	Soil		x	x	x	x
38393	K10204*	Soil		x	x	x	
	K10205	Soil		x	x	x	
	K10206	Soil		x	x	x	

KB0002203

Note:
* MS/MSD performed on this sample.

TABLE 3-1

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOIL INVESTIGATION
IMMUNOASSAY TEST RESULTS

Station No.	Sample ID	Elevation (ft)	Less than 1 mg/kg
Kalamazoo River Floodplain Soils			
Transect #KF1 – Verburg Park			
KF1-8A	K10216	763.1 – 762.6	Y
KF1-8B	K10217	762.6 – 762.1	Y
Transect #KF2 – South of D Avenue			
KF2-8A	K10030	756.8 – 756.3	Y
KF2-8B	K10031	756.3 – 755.8	Y
Transect #KF3 – Brookside Park			
KF3-8A	K10070	714.3 – 713.8	N
KF3-8B	K10071	713.8 – 713.3	Y
KF3-9A	K10073	Not Surveyed	Y
Transect #KF4 – River Road, Upstream of Otsego Dam			
KF4-8A	K10051	702.6 – 702.1	Y
KF4-8B	K10052	702.1 – 701.6	Y
Transect #KF5 – Downstream of Trowbridge Dam			
KF5-8A	K10074	660.7 – 660.2	Y
KF5-8B	K10075	660.2 – 659.7	Y
D-6 (Duplicate of KF5-8B)	K10076	660.2 – 659.7	Y

TABLE 3-2

ALLIED PALER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION
PCB ANALYTICAL RESULTS

Station No.	Sample ID	Elevation (ft)	AROCLORS (mg/kg) 1016	1221	1232	1242	1248	1254	1260	Total PCB
Portage Creek Floodplain Soils										
#PF1 – Off Reed Street (five random locations)										
PF1-1A	P10001	762.1-761.6	0.46	ND(0.13U)	ND(0.13U)	0.72	ND(0.13U)	ND(0.13U)	0.12J	1.3
PF1-1B	P10002	761.6 – 761.1	ND(0.064U)	ND(0.064U)	ND(0.064U)	ND(0.064U)	0.68	ND(0.064U)	0.14	0.82
PF1-2A	P10003	761.5 – 761.0	ND(3.8U)	ND(3.8U)	ND(3.8U)	27	5.1	ND(3.8U)	ND(3.8U)	32
PF1-2B	P10004	761.0 – 760.5	ND(0.76U)	ND(0.76U)	ND(0.76U)	10	2.0	ND(0.76U)	ND(0.76U)	12
PF1-3A	P10005	762.2 – 761.7	ND(0.31U)	ND(0.31U)	ND(0.31U)	ND(0.31U)	1.1J	ND(0.31U)	ND(0.31U)	1.1
D-1 (Duplicate of PF1-3A)	P10006	762.2 – 761.7	ND(0.060U)	ND(0.060U)	ND(0.060U)	ND(0.060U)	0.64J	ND(0.060U)	ND(0.060U)	0.64
PF1-3B	P10007	761.7 – 761.2	ND(0.060U)	ND(0.060U)	ND(0.060U)	ND(0.060U)	0.62	ND(0.060U)	ND(0.060U)	0.62
PF1-4A	P10008	762.6 – 762.1	ND(0.14U)	ND(0.14U)	ND(0.14U)	ND(0.14U)	1.1	0.78	0.14	2.0
PF1-4B	P10009	762.1 – 761.6	ND(0.069U)	ND(0.069U)	ND(0.069U)	0.11	ND(0.069U)	0.52	0.064J	0.69
PF1-5A	P10010	761.1 – 760.6	ND(0.41U)	ND(0.41U)	ND(0.41U)	ND(0.41U)	1.5	ND(0.41U)	ND(0.41U)	1.5
PF1-5B	P10011	760.6 – 760.1	ND(0.076U)	ND(0.076U)	ND(0.076U)	ND(0.076U)	1.1	ND(0.076U)	ND(0.076U)	1.1
Transect #PF-2 – Upjohn Park, Adjacent to Portage Creek										
PF2-1A	P10183	759.2 – 758.7	ND(0.13UJ)	ND(0.13UJ)	ND(0.13UJ)	ND(0.13UJ)	1.8J	ND(0.13UJ)	0.29J	2.1
PF2-1B	P10184	758.7 – 758.2	ND(0.12UJ)	ND(0.12UJ)	ND(0.12UJ)	ND(0.12UJ)	1.8J	ND(0.12UJ)	0.16J	2.0
PF2-1C	P10185	758.2 – 757.2	ND(0.13UJ)	ND(0.13UJ)	ND(0.13UJ)	ND(0.13UJ)	1.6J	ND(0.13UJ)	0.10J	1.7
PF2-2A	P10186	760.6 – 760.1	ND(0.063UJ)	ND(0.063UJ)	ND(0.063UJ)	ND(0.063UJ)	ND(0.063UJ)	ND(0.063UJ)	ND(0.063UJ)	---
PF2-2B	P10187	760.1 – 759.6	ND(0.059UJ)	ND(0.059UJ)	ND(0.059UJ)	ND(0.059UJ)	0.025J	ND(0.059UJ)	ND(0.059UJ)	0.025
PF2-2C	P10188	759.6 – 758.6	ND(0.055UJ)	ND(0.055UJ)	ND(0.055UJ)	ND(0.055UJ)	ND(0.055UJ)	ND(0.055UJ)	ND(0.055UJ)	---
D-10 (Duplicate of PF2-2C)	P10189	759.6 – 758.6	ND(0.055UJ)	ND(0.055UJ)	ND(0.055UJ)	ND(0.055UJ)	ND(0.055UJ)	ND(0.055UJ)	ND(0.055UJ)	---
PF2-3A	P10190	761.1 – 760.6	ND(0.067U)	ND(0.067U)	ND(0.067U)	ND(0.067U)	ND(0.067U)	ND(0.067U)	ND(0.067U)	---
PF2-3B	P10191	760.6 – 760.1	ND(0.061U)	ND(0.061U)	ND(0.061U)	ND(0.061U)	ND(0.061U)	ND(0.061U)	ND(0.061U)	---
PF2-4A	P10192	760.5 – 760.0	ND(0.059U)	ND(0.059U)	ND(0.059U)	ND(0.059U)	ND(0.059U)	ND(0.059U)	ND(0.059U)	---
PF2-4B	P10193	760.0 – 759.5	ND(0.059U)	ND(0.059U)	ND(0.059U)	ND(0.059U)	ND(0.059U)	ND(0.059U)	ND(0.059U)	---
PF2-5A	P10194	760.8 – 760.3	ND(0.057U)	ND(0.057U)	ND(0.057U)	ND(0.057U)	ND(0.057U)	ND(0.057U)	ND(0.057U)	---
PF2-5B	P10195	760.3 – 759.8	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	---

See Notes on Page 8

KB600022O5

TABLE 3-2

ALLIED PALER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION
PCB ANALYTICAL RESULTS

Station No.	Sample ID	Elevation (ft)	AROCLORS (mg/kg) 1016	1221	1232	1242	1248	1254	1260	Total PCB
Kalamazoo River Floodplain Soils										
Transect #KF1 – Verburg Park										
KF1-1A	K10197	754.8 – 754.3	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	0.410	0.059J	0.47
KF1-1B	K10198	754.3 – 753.8	ND(0.13U)	ND(0.13U)	ND(0.13U)	1.0	ND(0.13U)	ND(0.13U)	ND(0.13U)	1.0
KF1-1C	K10199	753.8 – 752.8	ND(0.071U)	ND(0.071U)	ND(0.071U)	0.037J	ND(0.071U)	0.029J	ND(0.071U)	0.066
KF1-2A	K10200	758.4 – 757.9	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	0.026J	ND(0.056U)	0.026
KF1-2B	K10201	757.9 – 757.4	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	---
KF1-2C	K10202	757.4 – 756.4	ND(0.051U)	ND(0.051U)	ND(0.051U)	ND(0.051U)	ND(0.051U)	ND(0.051U)	ND(0.051U)	---
D-20 (Duplicate of KF1-2C)	K10203	757.4 – 756.4	ND(0.051U)	ND(0.051U)	ND(0.051U)	ND(0.051U)	ND(0.051U)	ND(0.051U)	ND(0.051U)	---
KF1-3A	K10204	754.3 – 753.8	ND(0.049U)	ND(0.049U)	ND(0.049U)	ND(0.049U)	0.21JN	0.11JN	0.17	0.49
KF1-3B	K10205	753.8 – 753.3	ND(0.042U)	ND(0.086U)	ND(0.042U)	ND(0.042U)	0.023R	0.028J	ND(0.042U)	0.028
D-21 (Duplicate of KF1-3B)	K10206	753.8 – 753.3	ND(0.040U)	ND(0.082U)	ND(0.040U)	ND(0.040U)	0.044JN	ND(0.040U)	0.027J	0.071
KF1-4A	K10207	756.3 – 755.8	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	---
KF1-4B	K10208	755.8 – 755.3	ND(0.059UJ)	ND(0.059UJ)	ND(0.059UJ)	ND(0.059UJ)	ND(0.059UJ)	ND(0.059UJ)	ND(0.059UJ)	---
KF1-5A	K10209	755.4 – 754.9	ND(0.064UJ)	ND(0.064UJ)	ND(0.064UJ)	ND(0.064UJ)	ND(0.064UJ)	ND(0.064UJ)	ND(0.064UJ)	---
KF1-5B	K10210	754.9 – 754.4	ND(0.065UJ)	ND(0.065UJ)	ND(0.065UJ)	ND(0.065UJ)	ND(0.065UJ)	ND(0.065UJ)	ND(0.065UJ)	0.034
KF1-6A	K10211	758.1 – 757.6	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	---
KF1-6B	K10212	757.6 – 757.1	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	---
KF1-7A	K10213	761.6 – 761.1	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	---
D-22 (Duplicate of KF1-7A)	K10214	761.6 – 761.1	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	---
KF1-7B	K10215	761.1 – 760.6	ND(0.054UJ)	ND(0.054UJ)	ND(0.054UJ)	ND(0.054UJ)	ND(0.054UJ)	ND(0.054UJ)	ND(0.054UJ)	---
KF1-8A	K10216	763.1 – 762.6	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	---
KF1-8B	K10217	762.6 – 762.1	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	ND(0.052UJ)	---
Transect #KF2 – South of D Avenue										
KF2-1A	K10013	742.2 – 741.7	0.63	ND(0.53U)	ND(0.53U)	ND(0.53U)	ND(0.53U)	1.8	0.36J	3.0
KF2-1B	K10014	741.7 – 741.2	0.22	ND(0.092U)	ND(0.092U)	ND(0.092U)	ND(0.092U)	0.49	0.083J	0.79

See Notes on Page 8

KB600022O6

TABLE 3-2

ALLIED PALER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION
PCB ANALYTICAL RESULTS

Station No.	Sample ID	Elevation (ft)	AROCLORS (mg/kg) 1016	1221	1232	1242	1248	1254	1260	Total PCB
Transect #KF2 – South of D Avenue (Cont'd.)										
KF2-1C	K10015	741.2 – 740.2	0.078J	ND(0.091U)	ND(0.091U)	ND(0.091U)	ND(0.091U)	0.17	ND(0.091U)	0.25
KF2-2A	K10016	742.6 – 742.1	ND(0.088U)	ND(0.088U)	ND(0.088U)	ND(0.088U)	ND(0.088U)	ND(0.088U)	0.039J	0.039
KF2-2B	K10017	742.1 – 741.6	ND(0.078U)	ND(0.078U)	ND(0.078U)	ND(0.078U)	ND(0.078U)	ND(0.078U)	ND(0.078U)	---
KF2-2C	K10018	741.6 – 740.6	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	---
KF2-3A	K10019	742.4 – 741.9	ND(0.086U)	ND(0.18U)	ND(0.086U)	ND(0.086U)	ND(0.086U)	0.054J	ND(0.086U)	0.054
KF2-3B	K10020	741.9 – 741.4	ND(0.064U)	ND(0.13U)	ND(0.064U)	ND(0.064U)	ND(0.064U)	ND(0.064U)	ND(0.064U)	---
KF2-4A	K10021	742.7 – 742.2	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	---
D-2 (Duplicate of KF2-4A)	K10022	742.7 – 742.2	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	---
KF2-4B	K10023	742.2 – 741.7	ND(0.19U)	ND(0.19U)	ND(0.19U)	ND(0.19U)	ND(0.19U)	ND(0.19U)	ND(0.19U)	---
KF2-5A	K10024	742.7 – 742.2	ND(0.19U)	ND(0.19U)	ND(0.19U)	ND(0.19U)	ND(0.19U)	ND(0.19U)	ND(0.19U)	---
KF2-5B	K10025	742.2 – 741.7	ND(0.17UJ)	ND(0.17UJ)	ND(0.17UJ)	ND(0.17UJ)	ND(0.17UJ)	ND(0.17UJ)	ND(0.17UJ)	---
KF2-6A	K10026	742.9 – 742.4	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	0.13J	ND(0.27U)	0.13
KF2-6B	K10027	742.4 – 741.9	ND(0.094UJ)	ND(0.094UJ)	ND(0.094UJ)	ND(0.094UJ)	ND(0.094UJ)	ND(0.094UJ)	ND(0.094UJ)	---
KF2-7A	K10028	743.2 – 742.7	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	0.15J	ND(0.27U)	0.15
KF2-7B	K10029	742.7 – 742.2	ND(0.29U)	ND(0.29U)	ND(0.29U)	ND(0.29U)	ND(0.29U)	ND(0.29U)	ND(0.29U)	---
KF2-8A	K10030	756.8 – 756.3	ND(0.052U)	ND(0.052U)	ND(0.052U)	ND(0.052U)	ND(0.052U)	ND(0.052U)	ND(0.052U)	---
KF2-8B	K10031	756.3 – 755.8	ND(0.049U)	ND(0.049U)	ND(0.049U)	ND(0.049U)	ND(0.049U)	ND(0.049U)	ND(0.049U)	---
Transect #KF3 – Brookside Park										
KF3-1A	K10053	697.7 – 697.2	ND(0.14U)	ND(0.29U)	ND(0.14U)	ND(0.14U)	0.67J	0.25J	0.18	1.1
KF3-1B	K10054	697.2 – 696.7	ND(0.25U)	ND(0.25U)	ND(0.25U)	ND(0.25U)	0.40J	ND(0.25U)	ND(0.25U)	0.40
KF3-1C	K10055	696.7 – 695.7	ND(0.55UJ)	ND(0.55UJ)	ND(0.55UJ)	ND(0.55UJ)	ND(0.55UJ)	ND(0.55UJ)	ND(0.55UJ)	---
KF3-2A	K10056	698.1 – 697.6	ND(0.23U)	ND(0.23U)	ND(0.23U)	ND(0.23U)	1.2	0.46	0.17J	1.8
KF3-2B	K10057	697.6 – 697.1	0.20J	ND(0.27U)	ND(0.27U)	ND(0.27U)	0.68	0.14J	0.11J	1.1
D-5 (Duplicate of KF3-2B)	K10058	697.6 – 697.1	ND(0.27U)	ND(0.27U)	ND(0.27U)	0.47	0.86	0.47	0.11J	1.9
KF3-2C	K10059	697.1 – 696.1	ND(0.30U)	ND(0.30U)	ND(0.30U)	ND(0.30U)	0.24J	ND(0.30U)	ND(0.30U)	0.24
KF3-3A	K10060	698.0 – 697.5	ND(0.18UJ)	ND(0.18UJ)	ND(0.18UJ)	ND(0.18UJ)	0.48J	0.20J	0.076J	0.76

See Notes on Page 8

TABLE 3-2

ALLIED PALER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION
PCB ANALYTICAL RESULTS

Station No.	Sample ID	Elevation (ft)	AROCLORS (mg/kg) 1016	1221	1232	1242	1248	1254	1260	Total PCB
Transect #KF3 – Brookside Park (Cont'd.)										
KF3-3B	K10061	697.5 – 697.0	0.12J	ND(0.25UJ)	ND(0.25UJ)	ND(0.25UJ)	0.61	0.20	ND(0.25UJ)	0.93
KF3-4A	K10062	697.3 – 696.8	ND(0.17U)	ND(0.17U)	ND(0.17U)	0.94	0.71	0.24	0.081J	2.0
KF3-4B	K10063	696.8 – 696.3	ND(0.18U)	ND(0.18U)	ND(0.18U)	ND(0.18U)	ND(0.18U)	0.099J	ND(0.18U)	0.60
KF3-5A	K10064	700.1 – 699.6	ND(0.059U)	ND(0.059U)	ND(0.059U)	ND(0.059U)	ND(0.059U)	ND(0.059U)	ND(0.059U)	---
KF3-5B	K10065	699.6 – 699.1	ND(0.056UJ)	ND(0.056UJ)	ND(0.056UJ)	ND(0.056UJ)	ND(0.056UJ)	ND(0.056UJ)	ND(0.056UJ)	---
KF3-6A	K10066	706.5 – 706.0	ND(0.057U)	ND(0.057U)	ND(0.057U)	ND(0.057U)	ND(0.057U)	ND(0.057U)	ND(0.057U)	---
KF3-6B	K10067	706.0 – 705.5	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	---
KF3-7A	K10068	703.3 – 702.8	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	ND(0.053UJ)	---
KF3-7B	K10069	702.8 – 702.3	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	---
KF3-8A	K10070	714.3 – 713.8	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	0.37	0.027J	0.023J	0.42
KF3-8B	K10071	713.8 – 713.3	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	---
KF3-9A	K10073		ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	---
Transect #KF4 – River Road, Upstream of Otsego Dam										
KF4-1A	K10033	676.0 – 675.5	ND(0.25U)	ND(0.25U)	ND(0.25U)	ND(0.25U)	0.89	0.36	ND(0.25U)	1.3
KF4-1B	K10034	675.5 – 675.0	ND(0.55U)	ND(0.55U)	ND(0.55U)	ND(0.55U)	3.1	1.9	0.46J	5.5
KF4-1C	K10035	675.0 – 674.0	ND(0.64U)	ND(0.64U)	ND(0.64U)	ND(0.64U)	4.1J	2.6	0.72	7.4
D-3 (Duplicate of KF4-1C)	K10036	675.0 – 674.0	ND(0.64U)	ND(0.64U)	ND(0.64U)	ND(0.64U)	2.5J	0.89J	ND(0.64U)	3.4
KF4-2A	K10037	677.6 – 677.1	ND(0.18U)	ND(0.18U)	ND(0.18U)	ND(0.18U)	1.3	0.41	ND(0.18U)	1.7
KF4-2B	K10038	677.1 – 676.6	ND(1.5U)	ND(1.5U)	ND(1.5U)	ND(1.5U)	6.9J	5.6	1.1J	14
KF4-2C	K10039	676.6 – 675.6	ND(0.66UJ)	ND(0.66UJ)	ND(0.66UJ)	ND(0.66UJ)	9.6J	ND(0.66UJ)	0.91J	11
KF4-3A	K10040	680.2 – 679.7	ND(1.9U)	ND(1.9U)	ND(1.9U)	ND(1.9U)	6.0J	4.1J	0.97J	11
KF4-3B	K10041	679.7 – 679.2	NA	NA	NA	NA	NA	NA	NA	NA
KF4-4A	K10042	686.4 – 685.9	ND(0.036U)	ND(0.073U)	ND(0.036U)	ND(0.036U)	ND(0.036U)	ND(0.036U)	ND(0.036U)	---
KF4-4B	K10043	685.9 – 685.4	ND(0.35U)	ND(0.072U)	ND(0.35U)	ND(0.35U)	ND(0.35U)	ND(0.35U)	ND(0.35U)	---
KF4-5A	K10044	688.2 – 687.7	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	0.038J	0.038
KF4-5B	K10045	687.7 – 687.2	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	---
KF4-6A	K10046	690.2 – 689.7	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	---
D-4 (Duplicate of KF4-6A)	K10047	690.2 – 689.7	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	---

See Notes on Page 8

KB600220B

TABLE 3-2

ALLIED PALER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION
PCB ANALYTICAL RESULTS

Station No.	Sample ID	Elevation (ft)	AROCLORS (mg/kg) 1016	1221	1232	1242	1248	1254	1260	Total PCB
Transect #KF4 – River Road, Upstream of Otsego Dam (Cont'd.)										
KF4-6B	K10048	689.7 – 689.2	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	---
KF4-7A	K10049	693.9 – 693.4	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	---
KF4-7B	K10050	693.4 – 692.9	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	---
KF4-8A	K10051	702.6 – 702.1	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	---
KF4-8B	K10052	702.1 – 701.6	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	---
Transect #KF5 – Downstream of Trowbridge Dam										
KF5-1A	K10092	635.4 – 634.9	ND(0.077U)	ND(0.077U)	ND(0.077U)	ND(0.077U)	0.72	0.53	0.32	1.6
KF5-1B	K10093	634.9 – 634.4	ND(0.070U)	ND(0.070U)	ND(0.070U)	ND(0.070U)	0.51	0.39	0.16	1.1
KF5-1C	K10094	634.4 – 633.4	ND(0.062U)	ND(0.062U)	ND(0.062U)	ND(0.062U)	0.15	0.12	0.051J	0.32
KF5-2A	K10088	637.2 – 636.7	ND(0.045U)	ND(0.045U)	ND(0.045U)	ND(0.045U)	0.040J	0.031J	ND(0.045U)	0.071
KF5-2B	K10089	636.7 – 636.2	ND(0.043U)	ND(0.088U)	ND(0.043U)	ND(0.043U)	ND(0.043U)	ND(0.043U)	ND(0.043U)	---
KF5-2C	K10090	636.2 – 635.2	ND(0.061U)	ND(0.061U)	ND(0.061U)	ND(0.061U)	ND(0.061U)	ND(0.061U)	ND(0.061U)	---
D-8 (Duplicate of KF5-2C)	K10091	636.2 – 635.2	ND(0.062U)	ND(0.062U)	ND(0.062U)	ND(0.062U)	ND(0.062U)	ND(0.062U)	ND(0.062U)	---
KF5-3A	K10086	636.4 – 635.9	ND(0.068U)	ND(0.068U)	ND(0.068U)	0.040J	ND(0.068U)	0.079	0.030J	0.15
KF5-3B	K10087	635.9 – 635.4	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	---
KF5-4A	K10084	632.7 – 632.2	ND(0.31U)	ND(0.31U)	ND(0.31U)	0.88	1.2	0.49	0.21J	2.8
KF5-4B	K10085	632.2 – 631.7	ND(0.21U)	ND(0.21U)	ND(0.21U)	0.17J	0.18J	ND(0.21U)	ND(0.21U)	0.35
KF5-5A	K10081	637.8 – 637.3	ND(0.075U)	ND(0.075U)	ND(0.075U)	ND(0.075U)	ND(0.075U)	ND(0.075U)	ND(0.075U)	---
KF5-5B	K10082	637.3 – 636.8	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	---
D-7 (Duplicate of KF5-6B)	K10083	637.3 – 636.8	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	---
KF5-6A	K10079	637.3 – 636.8	ND(0.072U)	ND(0.072U)	ND(0.072U)	ND(0.072U)	ND(0.052U)	0.052J	ND(0.072U)	0.052
KF5-6B	K10080	636.8 – 636.3	ND(0.073UJ)	ND(0.073UJ)	ND(0.073UJ)	ND(0.073UJ)	ND(0.073UJ)	ND(0.073UJ)	ND(0.073UJ)	---
KF5-7A	K10077	637.7 – 637.2	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	---
KF5-7B	K10078	637.2 – 636.7	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	---
KF5-8A	K10074	660.7 – 660.2	ND(0.057U)	ND(0.057U)	ND(0.057U)	ND(0.057U)	ND(0.057U)	ND(0.057U)	ND(0.057U)	---
KF5-8B	K10075	660.2 – 659.7	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	ND(0.053U)	---
D-6 (Duplicate of KF5-6B)	K10076	660.2 – 659.7	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	---

See Notes on Page 8

KB600022O9

TABLE 3-2

ALLIED PALER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION
PCB ANALYTICAL RESULTS

Station No.	Sample ID	Elevation (ft)	AROCLORS (mg/kg) 1016	1221	1232	1242	1248	1254	1260	Total PCB
Transect #KF6 – Koopman Marsh										
KF6-1A	K10099	601.0 – 600.5	ND(0.084U)	ND(0.084U)	ND(0.084U)	ND(0.084U)	0.12J	0.15J	ND(0.084U)	0.27
D-9 (Duplicate of KF6-1A)	K10100	601.0 – 600.5	ND(0.083U)	ND(0.083U)	ND(0.083U)	ND(0.083U)	0.10	0.086	ND(0.083U)	0.19
KF6-1B	K10101	600.5 – 600.0	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	0.036J	ND(0.074U)	ND(0.074U)	0.036
KF6-1C	K10102	600.0 – 599.0	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	---
KF6-2A	K10096	599.9 – 599.4	ND(0.076U)	ND(0.076U)	ND(0.076U)	ND(0.076U)	0.15	0.10	0.040J	0.29
KF6-2B	K10097	599.4 – 598.9	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	---
KF6-2C	K10098	598.9 – 597.9	ND(0.071U)	ND(0.071U)	ND(0.071U)	ND(0.071U)	ND(0.071U)	ND(0.071U)	ND(0.071U)	---
KF6-3A	K10103	601.4 – 600.9	ND(0.064U)	ND(0.064U)	ND(0.064U)	ND(0.064U)	ND(0.064U)	ND(0.064U)	ND(0.064U)	0.092
KF6-3B	K10104	600.9 – 600.4	ND(0.060U)	ND(0.060U)	ND(0.060U)	ND(0.060U)	ND(0.060U)	ND(0.060U)	ND(0.060U)	---
KF6-3C	K10105	600.4 – 599.4	ND(0.060U)	ND(0.060U)	ND(0.060U)	ND(0.060U)	ND(0.060U)	ND(0.060U)	ND(0.060U)	---
KF6-4A	K10106	600.0 – 599.5	ND(0.088U)	ND(0.088U)	ND(0.088U)	ND(0.088U)	ND(0.088U)	0.11	ND(0.088U)	0.17
KF6-4B	K10107	599.5 – 599.0	ND(0.082U)	ND(0.082U)	ND(0.082U)	ND(0.082U)	ND(0.082U)	ND(0.082U)	ND(0.082U)	---
D-10 (Duplicate of KF6-4B)	K10108	599.5 – 599.0	ND(0.078U)	ND(0.078U)	ND(0.078U)	ND(0.078U)	ND(0.078U)	ND(0.078U)	ND(0.078U)	---
KF6-4C	K10109	599.0 – 598.0	ND(0.066U)	ND(0.066U)	ND(0.066U)	ND(0.066U)	ND(0.066U)	ND(0.066U)	ND(0.066U)	---
KF6-5A	K10110	599.4 – 598.9	ND(0.45U)	ND(0.45U)	ND(0.45U)	2.5	ND(0.45U)	0.85	ND(0.45U)	3.4
KF6-5B	K10111	598.9 – 598.4	ND(0.14U)	ND(0.14U)	ND(0.14U)	ND(0.14U)	0.15	ND(0.14U)	ND(0.14U)	0.15
KF6-5C	K10112	598.4 – 597.4	ND(0.13U)	ND(0.13U)	ND(0.13U)	ND(0.13U)	0.17	ND(0.13U)	ND(0.13U)	0.17
Transect #KF7 – Koopman Marsh Upstream of Swan Creek										
KF7-1A	K10120	600.1 – 599.6	ND(0.076U)	ND(0.076U)	ND(0.076U)	ND(0.076U)	ND(0.076U)	ND(0.076U)	ND(0.076U)	---
KF7-1B	K10121	599.6 – 599.1	ND(0.064U)	ND(0.064U)	ND(0.064U)	ND(0.064U)	ND(0.064U)	ND(0.064U)	ND(0.064U)	---
KF7-1C	K10122	599.1 – 598.1	ND(0.066U)	ND(0.066U)	ND(0.066U)	ND(0.066U)	ND(0.066U)	ND(0.066U)	ND(0.066U)	---
KF7-2A	K10116	600.9 – 600.4	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	0.24	0.064J	ND(0.074U)	0.30
KF7-2B	K10117	600.4 – 599.9	ND(0.070UJ)	ND(0.070UJ)	ND(0.070UJ)	ND(0.070UJ)	ND(0.070UJ)	0.034J	ND(0.070UJ)	0.034
D-11 (Duplicate of KF7-2B)	K10118	600.4 – 599.9	ND(0.069UJ)	ND(0.069UJ)	ND(0.069UJ)	ND(0.069UJ)	ND(0.069UJ)	ND(0.069UJ)	ND(0.069UJ)	---

See Notes on Page 8

KB600022 10

TABLE 3-2

ALLIED PALER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION
PCB ANALYTICAL RESULTS

Station No.	Sample ID	Elevation (ft)	AROCLORS (mg/kg) 1016	1221	1232	1242	1248	1254	1260	Total PCB
Transect #KF7 – Koopman Marsh Upstream of Swan Creek (Cont'd.)										
KF7-2C	K10119	599.9 – 598.9	ND(0.066UJ)	ND(0.066UJ)	ND(0.066UJ)	ND(0.066UJ)	ND(0.066UJ)	ND(0.066UJ)	ND(0.066UJ)	ND(0.066UJ)
KF7-3A	K10113	597.7 – 597.2	ND(0.080U)	ND(0.080U)	ND(0.080U)	0.061J	ND(0.080U)	0.074J	ND(0.080U)	0.14
KF7-3B	K10114	597.2 – 596.7	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	0.027J	ND(0.069U)	0.027
KF7-3C	K10115	596.7 – 595.7	ND(0.063U)	ND(0.063U)	ND(0.063U)	ND(0.063U)	0.23	0.13	0.028J	0.39
KF7-4A	K10123	600.5 – 600.0	ND(0.067UJ)	ND(0.067UJ)	ND(0.067UJ)	ND(0.067UJ)	ND(0.067UJ)	ND(0.067UJ)	ND(0.067UJ)	ND(0.067UJ)
D-12 (Duplicate of KF7-4A)	K10124	600.5 – 600.0	ND(0.068UJ)	ND(0.068UJ)	ND(0.068UJ)	ND(0.068UJ)	ND(0.068UJ)	0.077	ND(0.068UJ)	0.077
KF7-4B	K10125	600.0 – 699.5	ND(0.065UJ)	ND(0.065UJ)	ND(0.065UJ)	ND(0.065UJ)	ND(0.065UJ)	0.038J	ND(0.065UJ)	0.038
KF7-4C	K10126	699.5 – 698.5	ND(0.072U)	ND(0.072U)	ND(0.072U)	ND(0.072U)	ND(0.072U)	ND(0.072U)	ND(0.072U)	---
KF7-5A	K10127	599.0 – 598.5	ND(0.092U)	ND(0.092U)	ND(0.092U)	ND(0.092U)	0.38J	0.29	0.074J	0.74
KF7-5B	K10128	598.5 – 598.0	ND(0.086U)	ND(0.086U)	ND(0.086U)	ND(0.086U)	0.21	0.15	0.037J	0.40
KF7-5C	K10129	598.0 – 597.0	ND(0.089U)	ND(0.089U)	ND(0.089U)	ND(0.089U)	ND(0.089U)	ND(0.089U)	ND(0.089U)	---
Transect #KF8 – Swan Creek Marsh										
KF8-1A	K10131	598.5 – 598.0	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	ND(0.065U)	0.20	ND(0.065U)	0.26
KF8-1B	K10132	598.0 – 597.5	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	ND(0.054U)	---
KF8-1C	K10133	597.5 – 596.5	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	ND(0.056U)	---
KF8-2A	K10134	598.7 – 598.2	ND(0.070U)	ND(0.070U)	ND(0.070U)	0.086	ND(0.070U)	0.31	0.030J	0.43
KF8-2B	K10135	598.2 – 597.7	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	---
KF8-2C	K10136	597.7 – 596.7	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	---
D-13 (Duplicate of KF8-2C)	K10137	597.7 – 596.7	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	---
KF8-3A	K10138	598.4 – 597.9	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	0.12	ND(0.069U)	0.15	0.27
KF8-3B	K10139	592.9 – 597.4	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	---
KF8-3C	K10140	597.4 – 596.4	ND(0.076U)	ND(0.076U)	ND(0.076U)	ND(0.076U)	ND(0.076U)	ND(0.076U)	ND(0.076U)	---
KF8-4A	K10141	597.7 – 597.2	ND(0.071U)	ND(0.071U)	ND(0.071U)	ND(0.071U)	0.17	0.14	0.056J	0.37
KF8-4B	K10142	597.2 – 596.7	ND(0.067U)	ND(0.067U)	ND(0.067U)	ND(0.067U)	ND(0.067U)	0.070	0.063J	0.13
KF8-4C	K10143	596.7 – 595.7	ND(0.070U)	ND(0.070U)	ND(0.070U)	ND(0.070U)	ND(0.070U)	ND(0.070U)	ND(0.070U)	---
KF8-5A	K10144	597.6 – 597.1	ND(0.073U)	ND(0.073U)	ND(0.073U)	ND(0.073U)	0.33J	0.24	0.082	0.65

See Notes on Page 8

TABLE 3-2

ALLIED PALER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER FLOODPLAIN SOILS INVESTIGATION
PCB ANALYTICAL RESULTS

Station No.	Sample ID	Elevation (ft)	AROCLORS (mg/kg)							
			1016	1221	1232	1242	1248	1254	1260	Total PCB
Transect #KF8 – Swan Creek Marsh (Cont'd.)										
KF8-5B	K10145	597.1 – 596.6	ND(0.067U)	ND(0.067U)	ND(0.067U)	ND(0.067U)	0.036J	0.051J	ND(0.067U)	0.087
KF8-5C	K10146	596.6 – 595.6	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	---
D-14 (Duplicate of KF8-5C)	K10147	596.6 – 595.6	ND(0.072U)	ND(0.072U)	ND(0.072U)	ND(0.072U)	ND(0.072U)	ND(0.072U)	ND(0.072U)	---

Notes:
"A" – Samples are from a 0- to 6-inch depth.
"B" – Samples are from a 6- to 12-inch depth.
"C" – Samples are from a 12- to 24-inch depth.
NA – Not Analyzed
ND – Not Detected.

Notes Explaining Data Qualifers:
U – The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
J – The compound was positively identified; however, the associated numerical value is an estimated concentration only.
UJ – The compound was not detected above the reported sample quantitation limit.
However, the reported limitis approximate and may or may not reprsentthe actual limit of quantitation.
JN – The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
The associated numerical value is an estimated concentration only.
R – The sample results are rejected.

KB.000.2212

TABLE 3-3

ALLIED PAPER, INC./PORTAGA CREEK/KALAMAZOO RIVER
SUPERFUND SITE

OTTAWA AND POTTAWATAMIE MARSH SOIL CORE SAMPLES
PCB ANALYTICAL RESULTS

Station No.	Sample ID	AROCLORS (mg/kg) 1016	1221	1232	1242	1248	1254	1260	Total PCB
OM – Ottawa Marsh Core Samples									
OM-1A	K10153	ND(0.12U)	ND(0.12U)	ND(0.12U)	0.32	ND(0.12U)	0.45	0.055J	0.83
OM-1B	K10154	ND(0.055U)	ND(0.055U)	ND(0.055U)	ND(0.055U)	0.073R	0.12	0.10J	0.22
OM-1C	K10155	ND(0.072U)	ND(0.072U)	ND(0.072U)	ND(0.072U)	0.067J	0.083	ND(0.072U)	0.15
OM-1D	K10156	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	---
OM-1E	K10157	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	---
D-16 (Duplicate of OM-1E)	K10158	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	ND(0.069U)	---
OM-2A	K10159	ND(0.110U)	ND(0.110U)	ND(0.110U)	ND(0.110U)	0.42JN	0.18JN	0.070JN	0.67
OM-2B	K10160	ND(0.096U)	ND(0.096U)	ND(0.096U)	ND(0.096U)	ND(0.096U)	0.20	ND(0.096U)	0.20
OM-2C	K10161	ND(0.073U)	ND(0.073U)	ND(0.073U)	ND(0.073U)	ND(0.073U)	ND(0.073U)	ND(0.073U)	---
OM-2D	K10162	ND(0.063U)	ND(0.063U)	ND(0.063U)	ND(0.063U)	ND(0.063U)	ND(0.063U)	ND(0.063U)	---
OM-2E	K10163	ND(0.066U)	ND(0.066U)	ND(0.066U)	ND(0.066U)	ND(0.066U)	ND(0.066U)	ND(0.066U)	---
OM-3A	K10149	ND(0.180U)	ND(0.180U)	ND(0.180U)	ND(0.180U)	0.34	0.096J	ND(0.180U)	0.44
OM-3B	K10150	ND(0.084U)	ND(0.084U)	ND(0.084U)	ND(0.084U)	0.037J	ND(0.084U)	ND(0.084U)	0.037
OM-3C	K10151	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	ND(0.068U)	---
OM-3D	K10152	ND(0.061U)	ND(0.061U)	ND(0.061U)	ND(0.061U)	ND(0.061U)	ND(0.061U)	ND(0.061U)	---
PM – Pottowatamie Marsh Core Samples									
PM-1A	K10170	ND(0.29U)	ND(0.29U)	ND(0.29U)	ND(0.29U)	0.26J	0.12J	ND(0.29U)	0.38
PM-1B	K10171	ND(0.07U)	ND(0.14U)	ND(0.07U)	ND(0.07U)	0.14J	0.071	ND(0.070U)	0.21
D-17 (Duplicate of PM-1B)	K10172	ND(0.062U)	ND(0.062U)	ND(0.062U)	ND(0.062U)	0.091	0.045J	ND(0.062U)	0.14
PM-1C	K10173	ND(0.071U)	ND(0.071U)	ND(0.071U)	ND(0.071U)	ND(0.071U)	ND(0.071U)	ND(0.071U)	---
PM-1D	K10174	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	ND(0.074U)	---
PM-1E	K10175	ND(0.062U)	ND(0.062U)	ND(0.062U)	ND(0.062U)	ND(0.062U)	ND(0.062U)	ND(0.062U)	---

See Notes on Page 2

TABLE 3-3

ALLIED PAPER, INC./PORTAGA CREEK/KALAMAZOO RIVER
SUPERFUND SITE

OTTAWA AND POTTAWATAMIE MARSH SOIL CORE SAMPLES
PCB ANALYTICAL RESULTS

Station No.	Sample ID	AROCLORS (mg/kg) 1016	1221	1232	1242	1248	1254	1260	Total PCB
PM – Pottowatamie Marsh Core Samples (Cont'd.)									
PM-2A	K10165	ND(0.24U)	ND(0.24U)	ND(0.24U)	ND(0.24U)	0.79	0.17J	ND(0.24U)	0.96
PM-2B	K10166	ND(0.27U)	ND(0.27U)	ND(0.27U)	ND(0.27U)	0.93	0.16JN	ND(0.27U)	1.1
PM-2C	K10167	ND(0.32U)	ND(0.32U)	ND(0.32U)	ND(0.32U)	0.16JN	ND(0.32U)	ND(0.32U)	0.16
D-18 (Duplicate of PM-2C)	K10168	ND(0.3U)	ND(0.3U)	ND(0.3U)	0.62JN	ND(0.3U)	0.18JN	ND(0.3U)	0.80
PM-2D	K10169	ND(0.29U)	ND(0.29U)	ND(0.29U)	ND(0.29U)	ND(0.29U)	ND(0.29U)	ND(0.29U)	---
PM-3A	K10176	ND(0.32U)	ND(0.32U)	ND(0.32U)	ND(0.32U)	0.46	0.22J	ND(0.32U)	0.68
PM-3B	K10177	ND(0.18U)	ND(0.18U)	ND(0.18U)	ND(0.18U)	0.099J	ND(0.18U)	ND(0.18U)	0.099
PM-3C	K10178	ND(0.21U)	ND(0.21U)	ND(0.21U)	ND(0.21U)	ND(0.21U)	ND(0.21U)	ND(0.21U)	---
PM-3D	K10179	ND(0.14U)	ND(0.14U)	ND(0.14U)	ND(0.14U)	ND(0.14U)	ND(0.14U)	ND(0.14U)	---
D-18 (Duplicate of PM-3D)	K10180	ND(0.11U)	ND(0.11U)	ND(0.11U)	ND(0.11U)	ND(0.11U)	ND(0.11U)	ND(0.11U)	---
PM-3E	K10181	ND(0.067U)	ND(0.067U)	ND(0.067U)	ND(0.067U)	ND(0.067U)	ND(0.067U)	ND(0.067U)	---

Notes:
"A" – Samples are from a 0– to 2–inch depth.
"B" – Samples are from a 2– to 6–inch depth.
"C" – Samples are from a 6– to 12–inch depth.
"D" – Samples are from 12– to 24–inch depth.
"E" – Samples are from 24– to 36–inch depth.
ND – Not Detected.

Notes Explaining Data Qualifers:
U – The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
J – The compound was positively identified; however, the associated numerical value is an estimated concentration only.
R – The sample results are rejected.
JN – The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

KB600022 14

TABLE 3-4

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

KALAMAZOO RIVER FLOODPLAIN SOILS
TCL VOLATILES[1]

Station No.	Sample ID	Elevation (ft)	Concentration (mg/kg) Acetone	Toluene
Transect #KF3 – Brookside Park				
KF3-1A	K10053	697.7 – 697.2	0.0049	ND(0.045U)
Transect #KF4 – River Road, Upstream of Otsego Dam				
KF4-4B	K10043	685.9 – 685.4	ND(0.012UJ)	0.002J
Transect #KF5 – Downstream of Trowbridge Dam				
KF5-2A	K10088	637.2 – 636.7	ND(0.014U)	0.002J
KF5-2B	K10089	636.7 – 636.2	ND(0.013U)	0.003J

Notes:
[1]Showing only the results for compounds detected above quantitation limit.
"A" = Samples are from a 0- to 6-inch depth.
"B" – Samples are from a 6- to 12-inch depth.
"C" – Samples are from a 12- to 24-inch depth.
ND – Not Detected.

Notes Explaining Data Qualifiers:
J – The compound was positively identified; however, the associated numerical value is an estimated concentration only.
U – The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
UJ – The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

TABLE 3-5

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

KALAMAZOO RIVER FLOODPLAIN SOILS
TCL SEMI-VOLATILES[1]

Station No.	Sample ID	Elevation (ft)	Concentration (mg/kg)																	
			naphthalene	2-methyl-naphthalene	phenanthrene	anthracene	carbazole	di-n-butyl-phthalate	fluoranthene	pyrene	butylbenzyl phthalate	benzo(a) anthracene	chrysene	bis(2-ethyl hexyl) phthalate	benzo(b) fluoranthene	benzo(k) fluoranthene	benzo(a) pyrene	indeno (1,2,3-cd) pyrene	dibenzo(a,h) anthracene	benzo(g,h,i) perylene
Transect #KF1 - Verburg Park																				
KF1-3A	K10204	754.3 - 753.8	0.029J	0.040J	0.24J	0.044J	0.041J	0.050J	0.46J	0.35J	0.063J	0.20J	0.27J	0.26J	0.29J	0.23J	0.21J	0.096J	ND(0.49U)	0.038J
KF1-3B	K10205	753.8 - 753.3	ND(0.42U)	ND(0.42U)	0.10J	0.027J	ND(0.42U)	ND(0.42U)	0.15J	0.013J	ND(0.42U)	0.082J	0.087J	ND(0.42U)	0.071J	0.071J	0.083J	0.052J	ND(0.42U)	0.024J
D (Duplicate of KF1-3B)	K10206	753.8 - 753.3	ND(0.41U)	ND(0.41U)	0.030J	ND(0.41U)	ND(0.41U)	ND(0.41U)	0.066J	0.063J	ND(0.41U)	0.044J	0.046J	ND(0.41U)	0.045J	0.036J	0.044J	0.030J	ND(0.41U)	ND(0.41U)
Transect #KF2 - South of D Avenue																				
KF2-3A	K10019	742.4 - 741.9	ND(0.67U)	ND(0.67U)	ND(0.67U)	ND(0.67U)	ND(0.67U)	ND(0.67U)	0.12J	0.12J	ND(0.67U)	0.061J	0.097J	ND(0.67U)	0.14J	ND(0.67U)	0.13B	ND(0.67U)	ND(0.67U)	ND(0.67U)
Transect #KF3 - Brookside Park																				
KF3-1A	K10053	697.7 - 697.2	ND(1.4U)	ND(1.4U)	0.30J	ND(1.4U)	ND(1.4U)	0.20J	0.62J	0.55J	ND(1.4U)	0.34J	0.42J	0.32J	ND(1.4U)	ND(1.4U)	ND(1.4U)	ND(1.4U)	ND(1.4U)	ND(1.4U)
KF3-1B	K10054	697.2 - 696.7	ND(2.5U)	ND(2.5U)	ND(2.5U)	ND(2.5U)	ND(2.5U)	ND(2.5U)	0.27J	0.25J	ND(2.5U)	ND(2.5U)	ND(2.5U)	ND(2.5U)	ND(2.5U)	ND(2.5U)	ND(2.5U)	ND(2.5U)	ND(2.5U)	ND(2.5U)
Transect #KF5 - Downstream of Trowbridge Dam																				
KF5-2A	K10088	637.2 - 636.7	ND(0.44U)	ND(0.44U)	0.053J	ND(0.44U)	ND(0.44U)	ND(0.44U)	0.120J	0.11J	ND(0.44U)	0.075J	0.083J	ND(0.44U)	0.10J	ND(0.44U)	ND(0.44U)	ND(0.44U)	ND(0.44U)	ND(0.44U)
KF5-2B	K10089	636.7 - 636.2	ND(0.43U)	ND(0.43U)	ND(0.43U)	ND(0.43U)	ND(0.43U)	ND(0.43U)	0.047J	0.048J	ND(0.43U)	0.035J	0.041J	ND(0.43U)	0.041J	ND(0.43U)	ND(0.43U)	ND(0.43U)	ND(0.43U)	ND(0.43U)

Notes:
[1]Showing only the results for compounds detected above quantitation limit.
ND - Not Detected

Notes Explaining Data Qualifiers:
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B - Compound was detected in method blank.

KB600221A

TABLE 3-6

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

KALAMAZOO RIVER FLOODPLAIN SOILS
TCL PESTICIDES[1]

Station No.	Sample ID	Elevation (ft)	Concentration (mg/kg)								
			aldrin	endosulfan 1	4,4' DDE	endrin	4,4' DDD	4,4' DDT	endrin-aldehyde	alpha-chlordane	gamma-chlordane
Transect #KF1 – Verburg Park											
KF1-3A	K10204	754.3-753.8	ND(0.0025U)	ND(0.0025U)	0.018J	R	0.0079J	0.020J	ND(0.0049U)	0.0084JN	0.0035J
KF1-3B	K10205	753.8-753.3	ND(0.0022U)	ND(0.0022U)	0.0030J	ND(0.0042U)	ND(0.0042U)	R	ND(0.0042U)	ND(0.0022U)	ND(0.0022U)
D-21 (Duplicate of KF1-3B)	K10206	753.8-753.3	ND(0.0021U)	ND(0.0021U)	0.0057	ND(0.0040U)	ND(0.0040U)	R	ND(0.0040U)	ND(0.0021U)	ND(0.0021U)
Transect #KF3 – Brookside Park											
KF3-1A	K10053	697.7-697.2	ND(0.022U)	0.0062JN	0.014J	ND(0.014U)	ND(0.014U)	ND(0.014U)	0.013JN	0.0098JN	0.0082J
KF3-1B	K10054	697.2-696.7	0.011J	ND(0.013U)	ND(0.025U)	ND(0.025U)	ND(0.025U)	ND(0.025U)	ND(0.025U)	ND(0.013U)	ND(0.013U)
Transect #KF5 – Downstream of Trowbridge Dam											
KF5-2A	K10088	637.2-636.7	ND(0.0023U)	0.0027	ND(0.0045U)	0.0023J	ND(0.0045U)	ND(0.0045U)	ND(0.0045U)	ND(0.0023U)	ND(0.0023U)

Notes:
[1]Showing only the results for compounds detected above quantitation limit.
"A" – Samples are from a 0- to 6-inch depth.
"B" – Samples are from a 6- to 12-inch depth.
"C" – Samples are from a 12- to 24-inch depth.

Notes Explaining Data Qualifiers:
J – The compound was positively identified; however, the associated numerical value is an estimated concentration only.
U – The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
R – The sample results are rejected.
JN – The analysis indicated the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

KB000217

TABLE 3-7

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

KALAMAZOO RIVER FLOODPLAIN SOILS
TAL ANALYTICAL RESULTS[1]

Station No.	Sample ID	Elevation (ft)	Concentration (mg/kg) aluminum	antimony	arsenic	barium	beryllium	cadmium	calcium	chromium	cobalt	copper	cyanide	iron
Transect #KF1 – Verburg Park														
KF1-3A	K10204	754.3 – 753.8	5300.00	ND(12.20UJ)	5.10	70.40	0.49B	ND(0.68U)	19800.00	48.60	4000B	45.70	ND(0.11U)	11800.00[2]
KF1-3B	K10205	753.8 – 753.3	5580.00	ND(10.40UJ)	15.90J	69.60	0.46B	ND(0.58U)	30900.00	21.80	3.60B	27.60	ND(0.09U)	16600.00[2]
D-21 (Duplicate of KF1-3B)	K10206	753.8 – 753.3	4990.00	ND(12.30UJ)	54.0	75.20	0.41B	0.84BJ	24800.00	17.00	3.80B	20.30	ND(0.08U)	26400.00[2]
Transect #KF2 – South of D Avenue														
KF2-3A	K10019	742.4 – 741.9	11100.00	ND(25.80UJ)	31.60J	203.00	0.94B	ND(1.40U)	17400.00	3.80	6.20B	29.20J	0.42B	4110.00
KF2-3B	K10020	741.9 – 741.4	10000.00	ND(19.10UJ)	22.20J	143.00	0.67B	ND(1.10U)	8660.00	21.50	7.50B	10.90J	0.23B	7130.00
Transect #KF3 – Brookside Park														
KF3-1A	K10053	697.7 – 697.2	12300.00	ND(41.40UJ)	13.00J	223.00	0.76B	3.80J	26100.00	147.00	11.40B	162.00J	ND(0.32U)	2640.00
KF3-1B	K10054	697.2 – 696.7	8750.00	ND(53.90UN)	14.00BN	223.00	ND90.97U)	6.50	18400.00	99.60	8.60B	128.00	ND(0.58U)	18900.00
Transect #KF4 – River Road, Upstream of Otsego Dam														
KF4-4A	K10042	686.4 – 685.9	3560.00	ND(9.00UJ)	6.10J	30.50B	0.17B	ND(0.51U)	983.00	5.80	2.90B	3.80B	0.25B	6540.00
KF4-4B	K10043	685.9 – 685.4	4610.00	ND(5.40UJ)	3.30J	31.30	0.20B	ND(0.30U)	866.00	7.10	3.50B	3.00	ND(0.06U)	8110.00
Transect #KF5 – Downstream of Trowbridge Dam														
KF5-2A	K10088	637.2 – 636.7	4820.00	ND(8.00UJ)	8.30J	119.00	0.26B	0.79J	37100.00	19.80	3.80B	23.50J	ND(0.10U)	14700.00
KF5-2B	K10089	636.7 – 636.2	4640.00	12.80N	8.50N	115.0	0.32B	ND(0.58U)	49900.00	13.00	5.10B	13.50	ND(0.09U)	15700.00

Station No.	Sample ID	Elevation (ft)	Concentration (mg/kg) lead	magnesium	manganese	mercury	nickel	potassium	selenium	silver	sodium	thallium	vanadium	zinc
KF1-3A	K10204	754.3 – 753.8	174.00	6790.00	146.00[2]	0.30	40.70	264.00B	0.44B	ND(1.30U)	ND(231.00U)	ND(0.66U)	14.50	159.00
KF1-3B	K10205	753.8 – 753.3	64.70	5150.00	220.00[2]	0.14	19.20	224.00B	0.39BJ	ND(1.10U)	ND(196.00U)	ND(0.43U)	18.20	70.50
D-21 (Duplicate of KF1-3B)	K10206	753.8 – 753.3	44.90	5920.00	353.00[2]	0.06B	16.50	ND(184.00U)	0.30BJ	ND(1.40U)	ND(232.00U)	ND(0.50U)	16.60	66.00
Transect #KF2 – South of D Avenue														
KF2-3A	K10019	742.4 – 741.9	75.50	3690.00	857.00	0.67	16.80B	406.00B	2.70J	R	ND(487.00U)	ND(1.10U)	31.20	128.00
KF2-3B	K10020	741.9 – 741.4	17.70	2460.00	759.00	0.30	13.20B	ND(266.00U)	1.40J	R	ND(263.00U)	ND(0.64U)	32.40	46.20
Transect #KF3 – Brookside Park														
KF3-1A	K10053	697.7 – 697.2	357.00	8150.00	482.00	1.30	52.10	ND(819.00U)	2.30BJ	R	ND(782.00U)	ND(2.10U)	25.10B	458.00
KF3-1B	K10054	697.2 – 696.7	455.00	2980.00B	167.00	2.00	36.08B	ND(808.00U)	ND(22.0UN)	ND(5.90U)	ND(1020.00U)	ND(3.80U)	21.80B	330.00
Transect #KF4 – River Road, Upstream of Otsego Dam														
KF4-4A	K10042	686.4 – 685.9	24.20	78.80B	30.40	0.07B	4.10B	184.00B	ND(0.27UJ)	R	ND(171.00U)	ND(0.46U)	9.70	23.30
KF4-4B	K10043	685.9 – 685.4	8.00	95.40	34.10	0.05B	5.00	204.00B	ND(0.26UJ)	R	ND(103.00U)	ND(0.45U)	11.70	18.20
Transect #KF5 – Downstream of Trowbridge Dam														
KF5-2A	K10088	637.2 – 636.7	54.70	7910.00	834.00	0.46	9.70	304.00B	0.74BJ	ND(0.88U)	ND(151.00U)	ND(0.56U)	11.60	77.10
KF5-2B	K10089	636.7 – 636.2	27.10	6510.00	884.00	0.25	7.80B	413.00B	0.70BN	ND(1.10U)	ND(197.00U)	ND(0.51U)	12.90	44.60

Notes:
[1]Showing only the results for analytes detected above quantitation limit.
[2]Duplicate analysis not within control limits.
"A" – Samples are from a 0- to 6-inch depth.
"B" – Samples are from a 6- to 12-inch depth.
ND – Not detected.

Notes Explaining Data Qualifiers:
B – The reported value was obtained from a reading less than the contract required detection limit (CRDL) but greater than or equal to the instrucment detection limit (IDL).
N – Spiked sample recovery not within control limits.
U – The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
J – The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
R – The sample results are rejected.
UJ – The analyte was not detected above the reported

KE6000221B

TABLE 3-8

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

OTTAWA AND POTTAWATAMIE MARSH SOIL CORE SAMPLES
TCL VOLATILES[1]

Station No.	Sample ID	Concentration (mg/kg)	
		Acetone	Toluene
PM-1B	K10171	0.031	ND(0.024U)
D-17 (Duplicate of PM-1B)	K10172	0.025J	ND(0.026U)

Sample Depth:
"B" – Samples are from a 6- to 12-inch depth.

Notes Explaining Data Qualifiers:
[1]Showing only the results for analyte detected above quantitation limit.
J – The compound was positively identified; however, the associated numerical value *concentration only*.
U – The compound was analyzed for but not detected. The associated value is the cc quantitation limit.

TABLE 3-9

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

OTTAWA AND POTTAWATAMIE MARSH CORE SAMPLES
TCL SEMI-VOLATILES[1]

Station No.	Sample ID	Concentration (mg/kg)								
		naphthalene	2-methyl-naphthalene	phen-anthrene	anthracene	carbazole	di-n-butyl-phthalate	fluoranthene	pyrene	butylbenzyl phthalate
OM-1B	K10154	ND(0.55U)	ND(0.55U)	ND(0.55U)	ND(0.55U)	ND(0.55U)	ND(0.55U)	0.087J	0.092J	ND(0.55U)
D-17 (Duplicate of PM-1B)	K10172	ND(0.62U)	ND(0.62U)	ND(0.62U)	ND(0.62U)	ND(0.62U)	ND(0.62U)	ND(0.62U)	0.032J	ND(0.62U)

Station No.	Sample ID	Concentration (mg/kg)								
		benzo(a) anthracene	chrysene	bis(2-ethyl hexyl) phthalate	benzo(b) fluoranthene	benzo(k) fluoranthene	benzo(a) pyrene	indeno (1,2,3-cd) pyrene	dibenzo(a,h) anthracene	benzo(g,h,i) perylene
OM-1B	K10154	0.053J	0.077J	ND(0.55U)	0.095J	0.049J	0.082J	0.085J	0.049J	0.073J
D-17 (Duplicate of PM-1B)	K10172	ND(0.62U)	ND(0.62U)	ND(0.62U)	ND(0.62U)	ND(0.62U)	ND(0.62U)	ND(0.62U)	ND(0.62U)	ND(0.62U)

Notes:
[1]Showing only the results for compounds detected above quantitation limit.
ND - Not Detected.

Notes Explaining Data Qualifiers:
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

TABLE 3-10

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

OTTAWA AND POTTAWATAMIE MARSH SOIL CORE SAMPLES
TCL PESTICIDES[1]

Station No.	Sample ID	Concentration (mg/kg)								
		aldrin	endosulfan I	4,4'-DDE	endrin	4,4'-DDD	4,4'-DDT	endrin-aldehyde	alpha-chlordane	gamma-chlordane
OM-1B	K10154	0.0023J	ND(0.0028U)	0.0062	ND(0.0055U)	ND(0.0055U)	ND(0.0055U)	0.0046J	0.0017J	ND(0.0028U)
PM-1B	K10171	0.0039	ND(0.0036U)	0.0039J	ND(0.007U)	ND(0.007U)	ND(0.007U)	ND(0.007U)	ND(0.0036U)	ND(0.0036U)
D-17 (Duplicate of PM-1B)	K10172	0.0029J	ND(0.0032U)	ND(0.0062U)	ND(0.0062U)	ND(0.0062U)	ND(0.0062U)	ND(0.0062U)	ND(0.0036U)	ND(0.0036U)

Notes:
[1]Showing only the results for compounds detected above quantitation limit.
'B' - Samples are from a 6- to 12-inch depth.
ND - Not Detected.

Notes Explaining Data Qualifiers:
J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

TABLE 3-11

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

OTTAWA AND POTTAWATAMIE MARSH SOIL CORE SAMPLES
TAL ANALYTICAL RESULTS[1]

Station No.	Sample ID	Concentration (mg/kg)											
		aluminum	antimony	arsenic	barium	beryllium	cadmium	calcium	chromium	cobalt	copper	cyanide	iron
OM1 – Ottawa Marsh Core Sample													
OM-1B	K10154	15100.00	ND(13.60UJ)	1.20J	190.00	0.61N	1.80J	21700.00	62.40	93.0B	41.20J	ND(0.12U)	34700.00
PM1 – Pottawatamie Marsh Core Sample													
PM-1B	K10171	4530.00	ND(13.10UJ)	3.50BJ	65.00	ND(0.24U)	ND(0.74U)	12700.00	17.20	3.70B	11.60	ND(0.15U)	7250.00
D-17 (Duplicate of PM-1B)	K10172	3080.00	ND(9.80UJ)	3.60J	53.70	0.18B	ND(0.55U)	10900.00	1.10	2.40B	8.50	ND(0.14U)	5650.00

Station No.	Sample ID	Concentration (mg/kg)											
		lead	magnesium	manganese	mercury	nickel	potassium	selenium	silver	sodium	thallium	vanadium	zinc
OM1 – Ottawa Marsh Core Sample													
OM-1B	K10154	168.00	1.10	326.00	1.10	33.00	864.00B	2.50J	ND(1.50U)	ND(258.00U)	ND(0.80U)	32.20	196.00
PM1 – Pottawatamie Marsh Core Sample													
PM-1B	K10171	25.50	28.30	104.00	0.23	10.50B	396.00B	ND(0.57UJ)	ND(1.40U)	ND(248.00U)	ND(0.99U)	11.60B	42.60
D-17 (Duplicate of PM-1B)	K10172	10.90	2730.00	93.90	0.32	6.10B	197.00B	0.37BJ	ND(1.10U)	ND(186.00U)	ND(0.54U)	7.50B	29.60

Notes:
[1]Showing only the results for analytes detected above quantitation limit.
ND – Not detected.

Notes Explaining Data Qualifiers:
B – The reported value was obtained form a reading less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
J – The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
N – Spiked sample recovery not within control limits.
U – The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
UJ – The analyte was analyzed for but not detected. The associated value is the analyte instrument dtection limit. The analyte was positively identified; however, the assolcated numerical value is an estimated concentration only.
BJ – The reported value was obtained form a reading less than the contract required detection limit (CRDL) but greater than or equal to the instrumen

KB000222

TABLE 3-12

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER/KOOPMAN MARSH/SWAN CREEK MARSH
FLOODPLAIN SOIL SAMPLES
TOTAL ORGANIC CARBON (TOC) RESULTS

Station No.	Sample ID	Elevation (ft)	Total Organic Carbon (% W/W dry)
Portage Creek Floodplain Soils			
Transect #PF1 – Off Reed Street (five random locations)			
PF1-1A	P10001	762.1-761.6	4.4
PF1-2A	P10003	761.5 – 761.0	10.4
PF1-3A	P10005	762.2 – 761.7	8.5
D-1 (Duplicate of PF1-3A)	P10006	762.2 – 761.7	7.4
PF1-4A	P10008	762.6 – 762.1	7.0
PF1-5A	P10010	761.1 – 760.6	9.8
Transect #PF-2 – Upjohn Park, Adjacent to Portage Creek			
PF2-1A	P10183	759.2 – 758.7	4.7
PF2-2A	P10186	760.6 – 760.1	5.7
PF2-3A	P10190	761.1 – 760.6	4.1
PF2-4A	P10192	760.5 – 760.0	2.6
PF2-5A	P10194	760.8 – 760.3	3.2
Kalamazoo River Floodplain Soils			
Transect #KF1 – Verburg Park			
KF1-1A	K10197	754.8 – 754.3	7.7
KF1-2A	K10200	758.4 – 757.9	36.0
KF1-4A	K10207	756.3 – 755.8	3.3
KF1-5A	K10209	755.4 – 754.9	3.7
KF1-6A	K10211	758.1 – 757.6	1.3
KF1-7A	K10213	761.6 – 761.1	1.9
D-22 (Duplicate of KF1-7A)	K10214	761.6 – 761.1	1.6
KF1-8A	K10216	763.1 – 762.6	1.7
Transect #KF2 – South of D Avenue			
KF2-1A	K10013	742.2 – 741.7	10.5
KF2-2A	K10016	742.6 – 742.1	5.6
KF2-3A	K10019	742.4 – 741.9	18.8
KF2-4A	K10021	742.7 – 742.2	31.0
D-2 (Duplicate of KF2-4A)	K10022	742.7 – 742.2	30.0
KF2-5A	K10024	742.7 – 742.2	22.0
KF2-6A	K10026	742.9 – 742.4	30.0
KF2-7A	K10028	743.2 – 742.7	23.0
KF2-8A	K10030	756.8 – 756.3	3.0

See Notes on Page 3

TABLE 3-12

ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER/KOOPMAN MARSH/SWAN CREEK MARSH
FLOODPLAIN SOIL SAMPLES
TOTAL ORGANIC CARBON (TOC) RESULTS

Station No.	Sample ID	Elevation (ft)	Total Organic Carbon (% W/W dry)
Transect #KF3 – Brookside Park			
KF3-1A	K10053	697.7 – 697.2	19.6
KF3-2A	K10056	698.1 – 697.6	24.0
KF3-3A	K10060	698.0 – 697.5	17.4
KF3-4A	K10062	697.3 – 696.8	12.3
KF3-5A	K10064	700.1 – 699.6	2.3
KF3-6A	K10066	706.5 – 706.0	1.4
KF3-7A	K10068	703.3 – 702.8	0.4
KF3-8A	K10070	714.3 – 713.8	0.4
KF3-9A	K10073		0.7
Transect #KF4 – River Road, Upstream of Otsego Dam			
KF4-1A	K10033	676.0 – 675.5	15.8
KF4-2A	K10037	677.6 – 677.1	11.8
KF4-3A	K10040	680.2 – 679.7	8.5
KF4-4A	K10042	686.4 – 685.9	0.9
KF4-5A	K10044	688.2 – 687.7	2.5
KF4-6A	K10046	690.2 – 689.7	1.0
D-4 (Duplicate of KF4-6A)	K10047	690.2 – 689.7	1.1
KF4-7A	K10049	693.9 – 693.4	1.8
KF4-8A	K10051	702.6 – 702.1	2.1
Transect #KF5 – Downstream of Trowbridge Dam			
KF5-1A	K10092	635.4 – 634.9	7.6
KF5-2A	K10088	637.2 – 636.7	4.3
KF5-3A	K10086	636.4 – 635.9	6.0
KF5-4A	K10084	632.7 – 632.2	14.5
KF5-5A	K10081	637.8 – 637.3	8.8
KF5-6A	K10079	637.3 – 636.8	5.1
KF5-7A	K10077	637.7 – 637.2	6.9
KF5-8A	K10074	660.7 – 660.2	2.1
Koopman and Swan Creek Marsh Floodplain Soils			
Transect #KF6 – Koopman Marsh			
KF6-1A	K10099	601.0 – 600.5	6.2
D-9 (Duplicate of KF6-1A)	K10100	601.0 – 600.5	6.6
KF6-2A	K10096	599.9 – 599.4	6.4
KF6-3A	K10103	601.4 – 600.9	2.9
KF6-4A	K10106	600.1 – 599.6	5.2
KF6-5A	K10110	599.3 – 598.8	26.0

See Notes on Page 3

KB60002224

TABLE 3-12

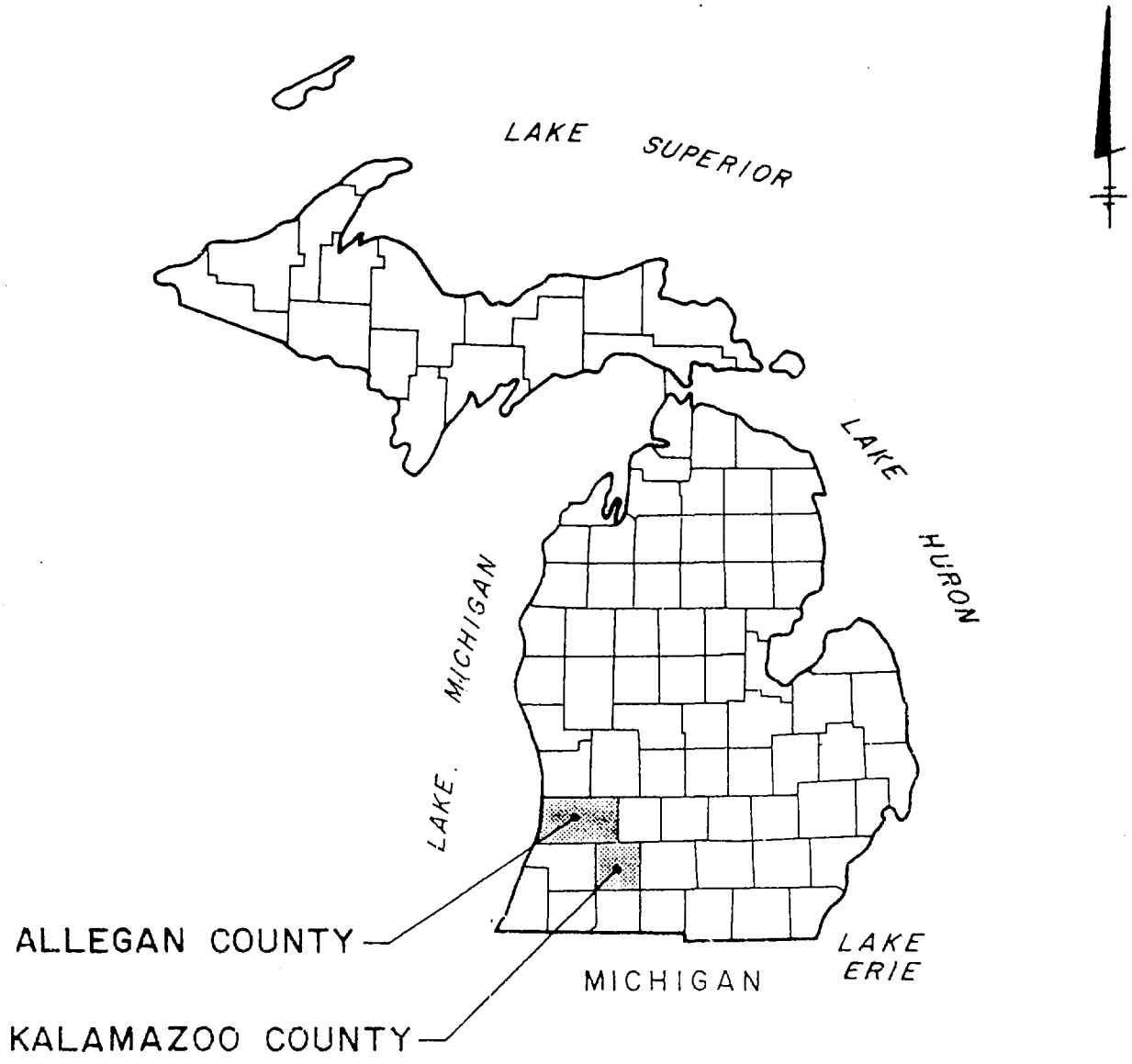
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER
SUPERFUND SITE

PORTAGE CREEK/KALAMAZOO RIVER/KOOPMAN MARSH/SWAN CREEK MARSH
FLOODPLAIN SOIL SAMPLES
TOTAL ORGANIC CARBON (TOC) RESULTS

Station No.	Sample ID	Elevation (ft)	Total Organic Carbon (% W/W dry)
Transect #KF7 – Koopman Marsh Upstream of Swan Creek			
KF7-1A	K10120	600.1 – 599.6	4.8
KF7-2A	K10116	601.0 – 600.5	7.0
KF7-3A	K10113	597.8 – 597.3	2.5
KF7-4A	K10123	600.5 – 600.0	3.1
D-12 (Duplicate of KF7-4A)	K10124	600.5 – 600.0	3.2
KF7-5A	K10127	599.0 – 598.5	8.7
Transect #KF8 – Swan Creek Marsh			
KF8-1A	K10131	598.7 – 598.2	1.8
KF8-2A	K10134	598.8 – 598.3	4.8
KF8-3A	K10138	598.6 – 598.1	3.7
KF8-4A	K10141	597.9 – 597.4	4.3
KF8-5A	K10144	597.7 – 597.2	4.3

Sample Depths:
"A" – Samples are from a 0- to 6-inch depth.
"B" – Samples are from a 6- to 12-inch depth.
"C" – Samples are from a 12- to 24-inch depth.

Figures



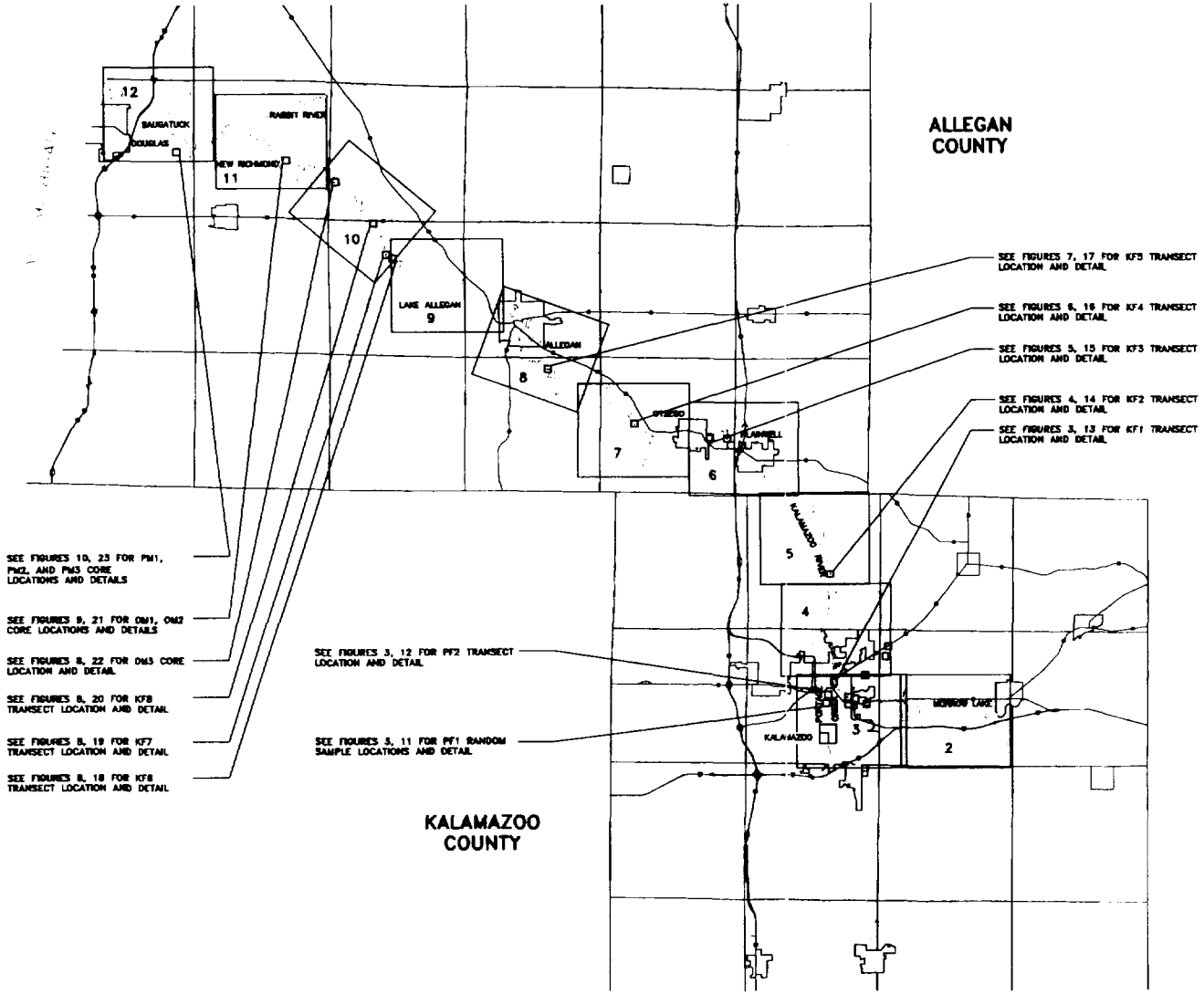
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/
KALAMAZOO RIVER SUPERFUND SITE
FLOODPLAIN SOILS TECHINCAL MEMO

LOCATION PLAN

FIGURE 1

FEB, 1994
645.24.37



LEGEND

[2] DCS (BLASLAND & BOUCK, 1992) SHEET NO. AND FLOODPLAIN AREA DESCRIBED

0 5 MILES 10 MILES

SCALE: 1" = 5 MILES

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

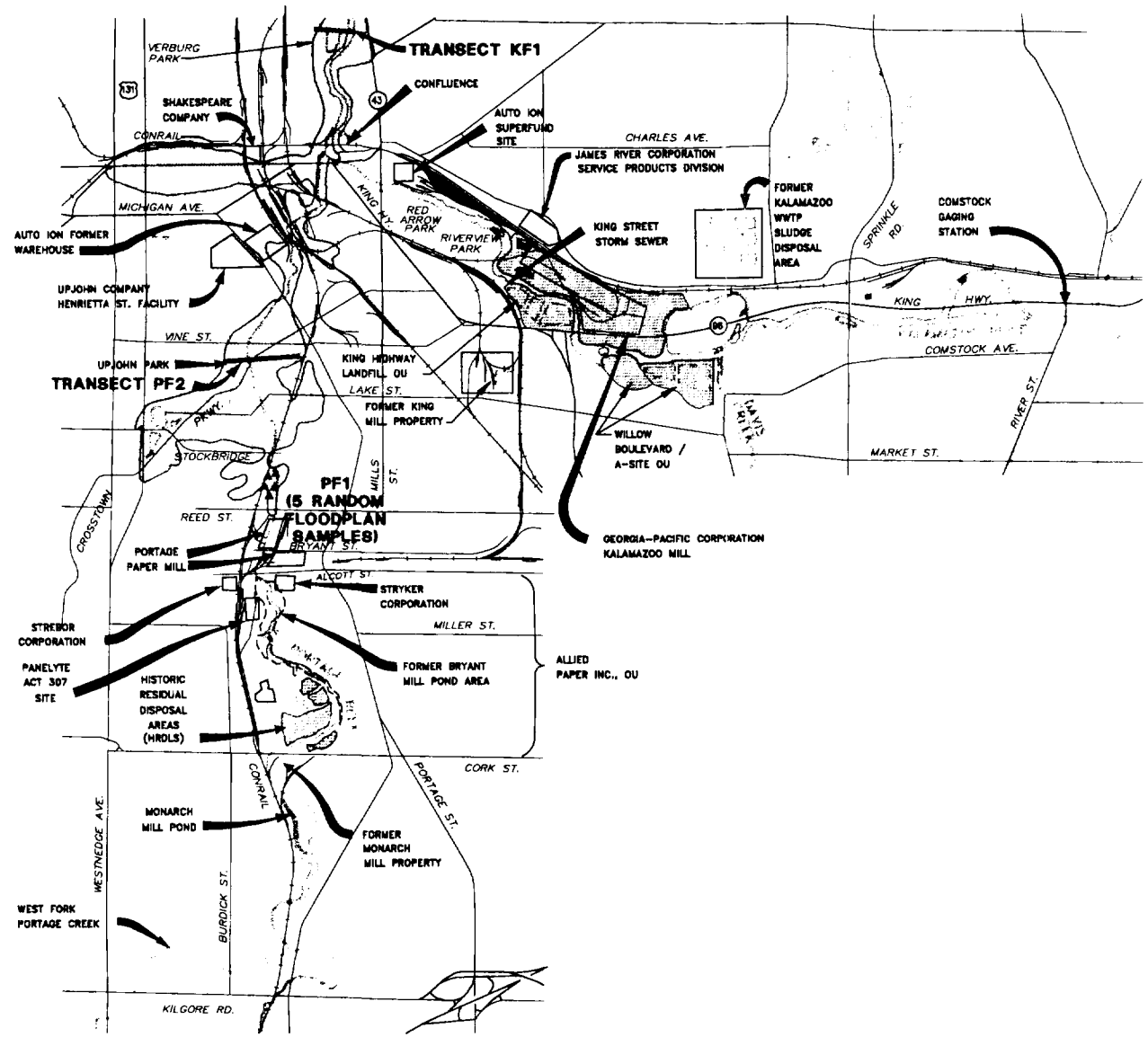
KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

INDEX TO DRAWINGS FIGURE **2**

KR0002228

2/94 SA-RLP AK DJH YCC
B4524.07R\FLOOD\B4524G08.DWG



LEGEND

- RAILROAD RIGHT-OF-WAY
- APPROXIMATE DELINEATION OF PRE-DRAWDOWN CREEK CHANNEL
- APPROXIMATE DELINEATION OF PRESENT CREEK CHANNEL
- FLOODPLAIN SOIL SAMPLING TRANSECT
- FLOODPLAIN SOIL RANDOM SAMPLES
- 100-YEAR FLOODPLAIN

KBS0002229

0 2400' 4800'

SCALE: 1" = 2400'

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

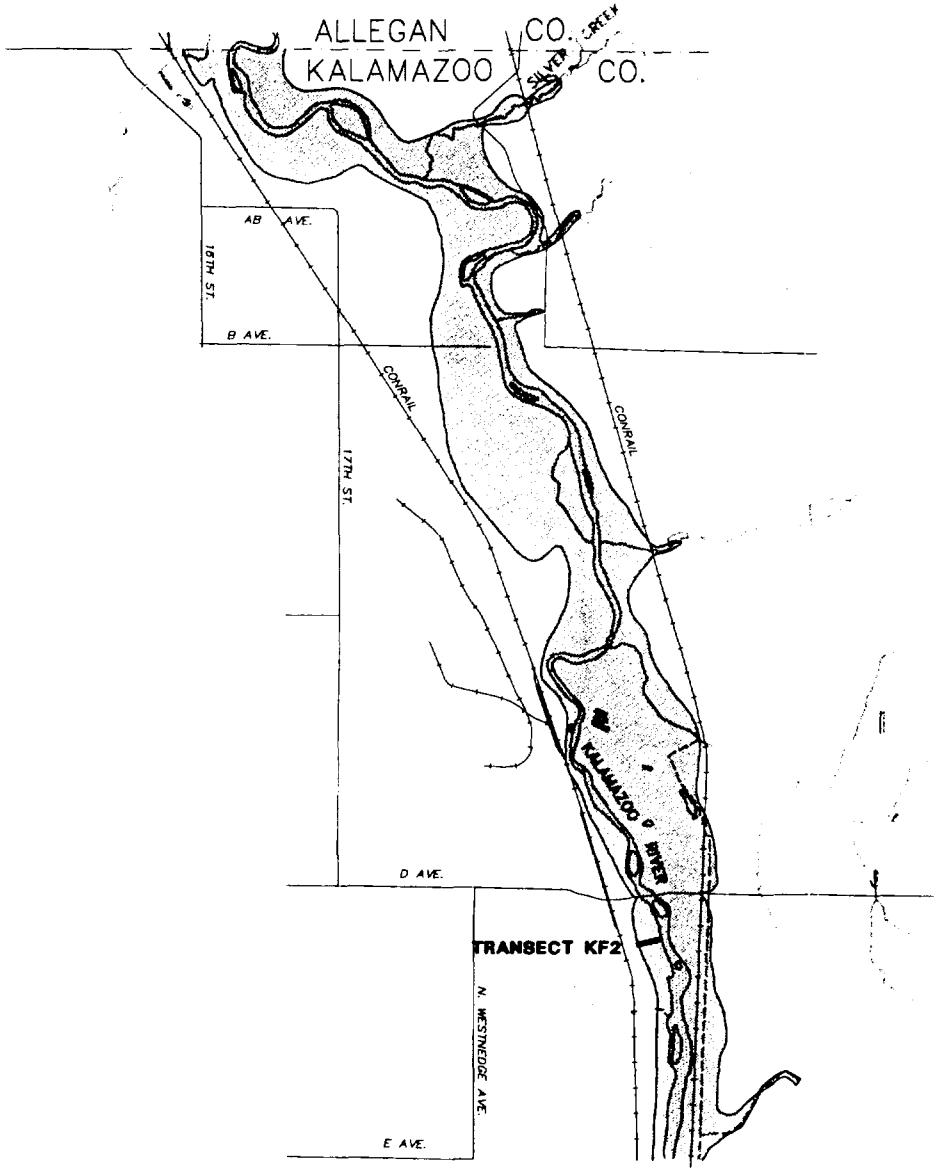
KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

FLOODPLAIN TRANSECTS PF2 AND KF1 AND RANDOM FLOODPLAIN SAMPLES PF1

FIGURE 3

2/84 SA-RLP/YOC
8453037R/FLOOD/8452A001.DWG



LEGEND

- RAILROAD RIGHT-OF-WAY
- FLOODPLAIN SOIL SAMPLING TRANSECT
- 100-YEAR FLOODPLAIN

KB60002230

0 2400' 4800'

SCALE: 1" = 2400'

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

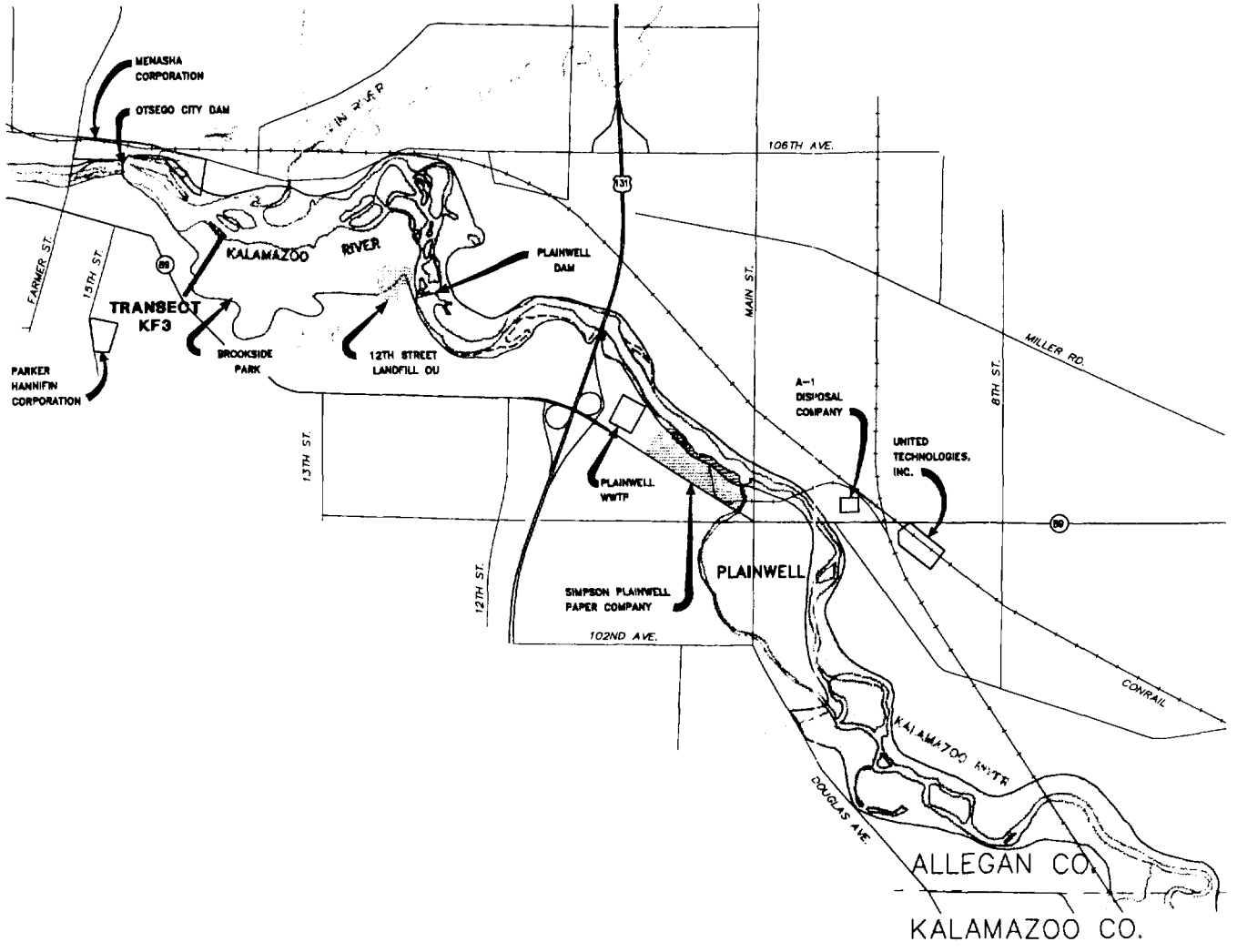
KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

FLOODPLAIN TRANSECT KF2

FIGURE **4**

2/84 54-RLP, YDC
84524378/FLOOD/84624002.DWG



LEGEND

- RAILROAD RIGHT-OF-WAY
- APPROXIMATE DELINEATION OF PRE-DRAWDOWN CREEK CHANNEL
- APPROXIMATE DELINEATION OF PRESENT CREEK CHANNEL
- FLOODPLAIN SOIL SAMPLING TRANSECT
- 100-YEAR FLOODPLAIN

KB60002231

0 2400' 300'

SCALE: 1" = 2400'

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

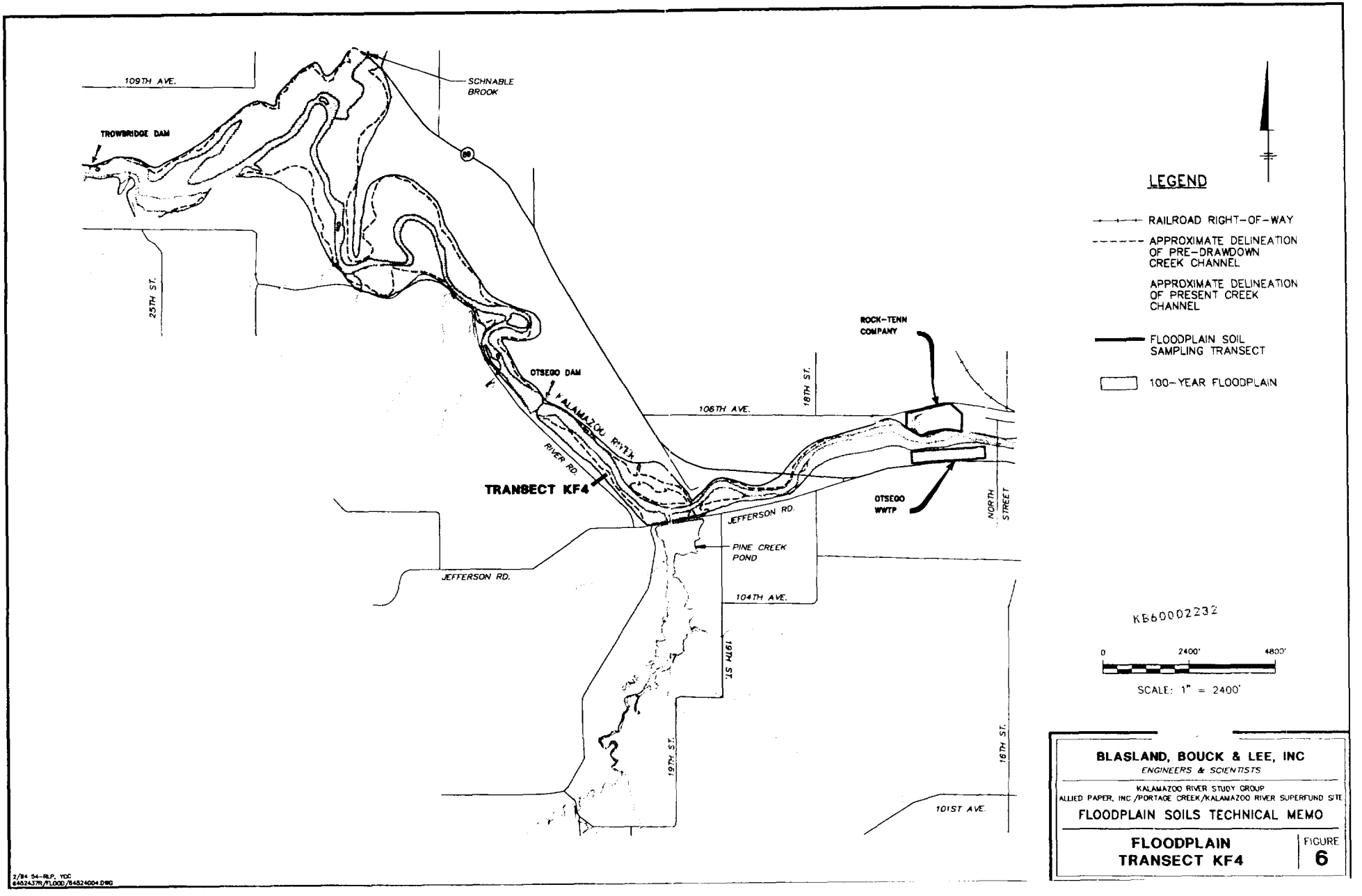
KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

FLOODPLAIN TRANSECT KF3

FIGURE **5**

2/94 SA-RLP/YCC
8453037R/FLOOD/8452A003.DWG



2/84 54-RLP, YDC
64524378/FLOOD/64524004.DWG

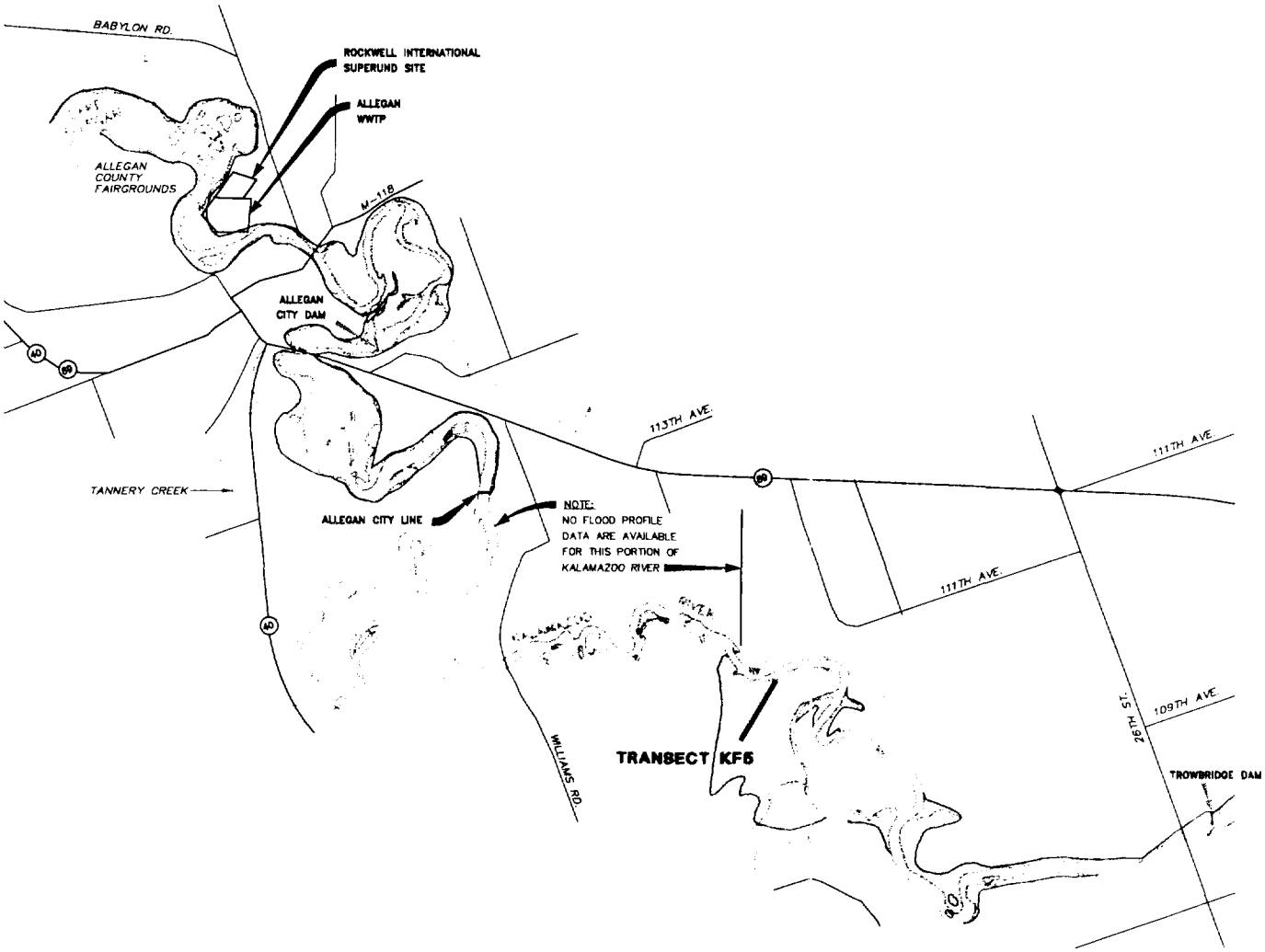
BLASLAND, BOUCK & LEE, INC
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

FLOODPLAIN TRANSECT KF4

FIGURE **6**



LEGEND

FLOODPLAIN SOIL SAMPLING TRANSECT

100-YEAR FLOODPLAIN

KBG0002233

0 2400' 4800'

SCALE: 1" = 2400'

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

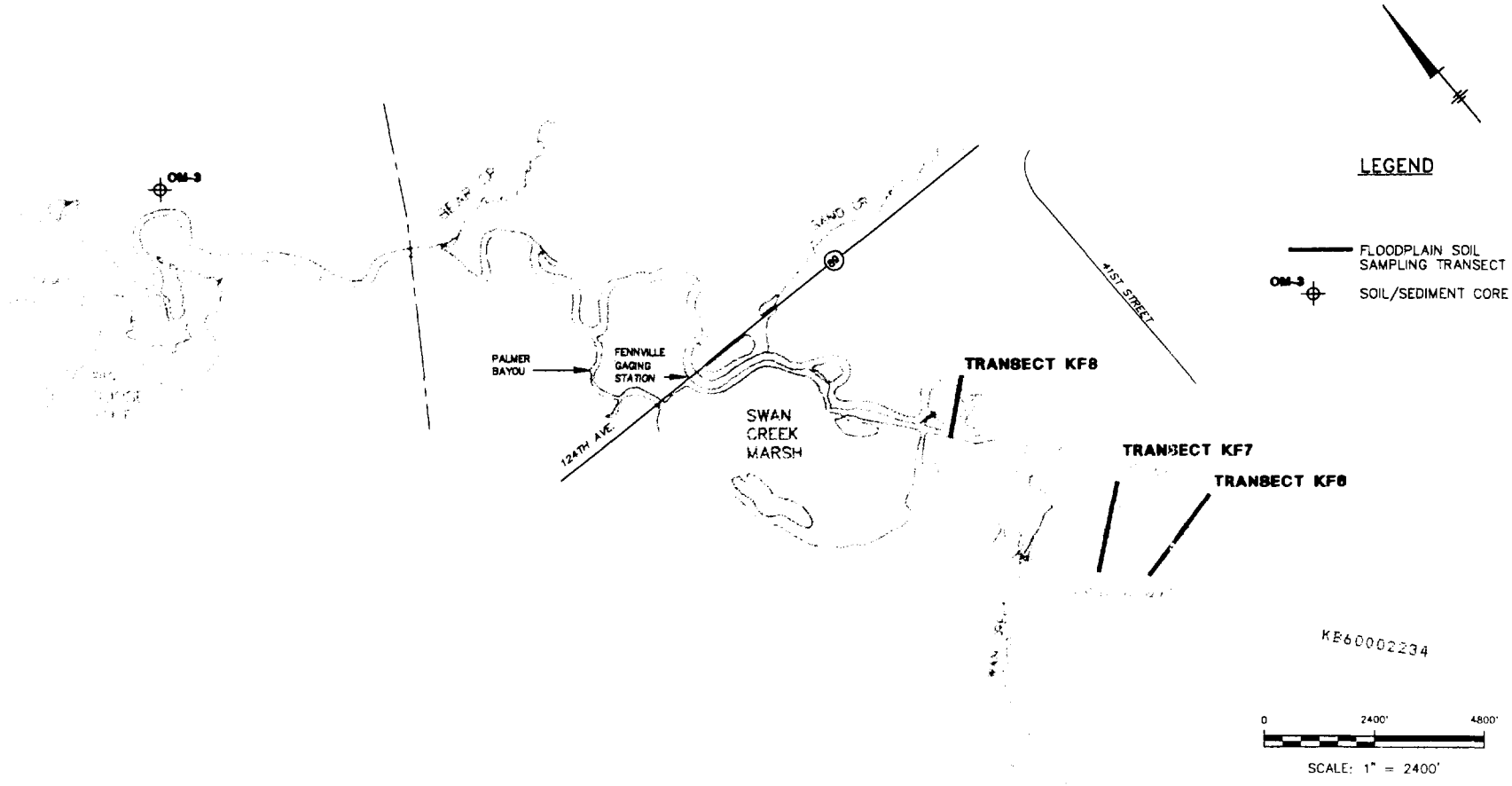
KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

FLOODPLAIN TRANSECT KF5

FIGURE **7**

2/94 SA-RLP/YCC
8453037R/FLOOD/8452A005.DWG



BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

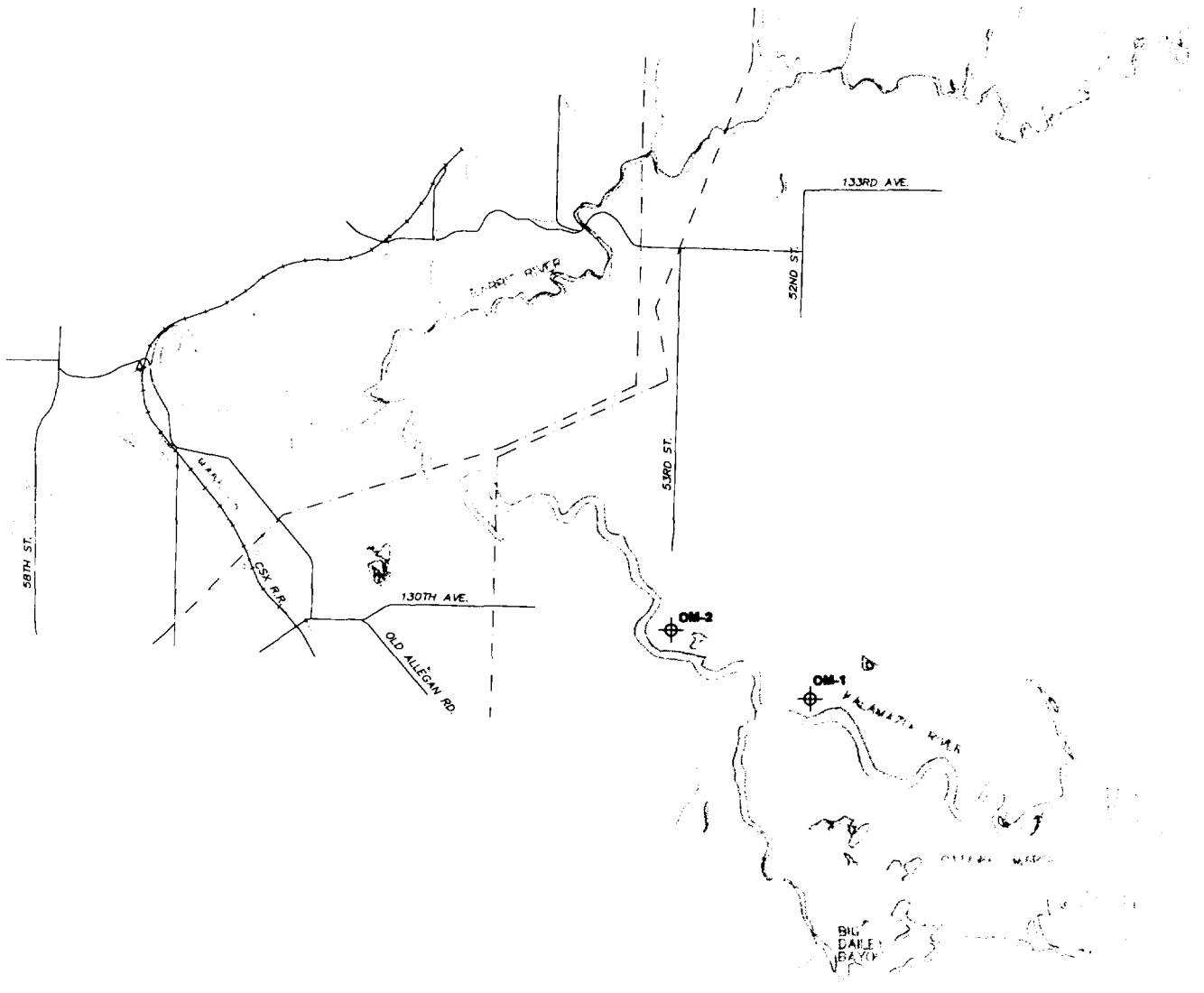
KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

FLOODPLAIN TRANSECTS KF6, KF7 & KF8 AND OTTAWA MARSH SEDIMENT CORE OM-3

FIGURE **8**

2/94 54--RLP, YOC
64524378/FLOOD/84524008.DWG



LEGEND

RAILROAD RIGHT-OF-WAY

OM-1 SOIL/SEDIMENT CORE

KB60002235

0 2400' 4800'

SCALE: 1" = 2400'

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

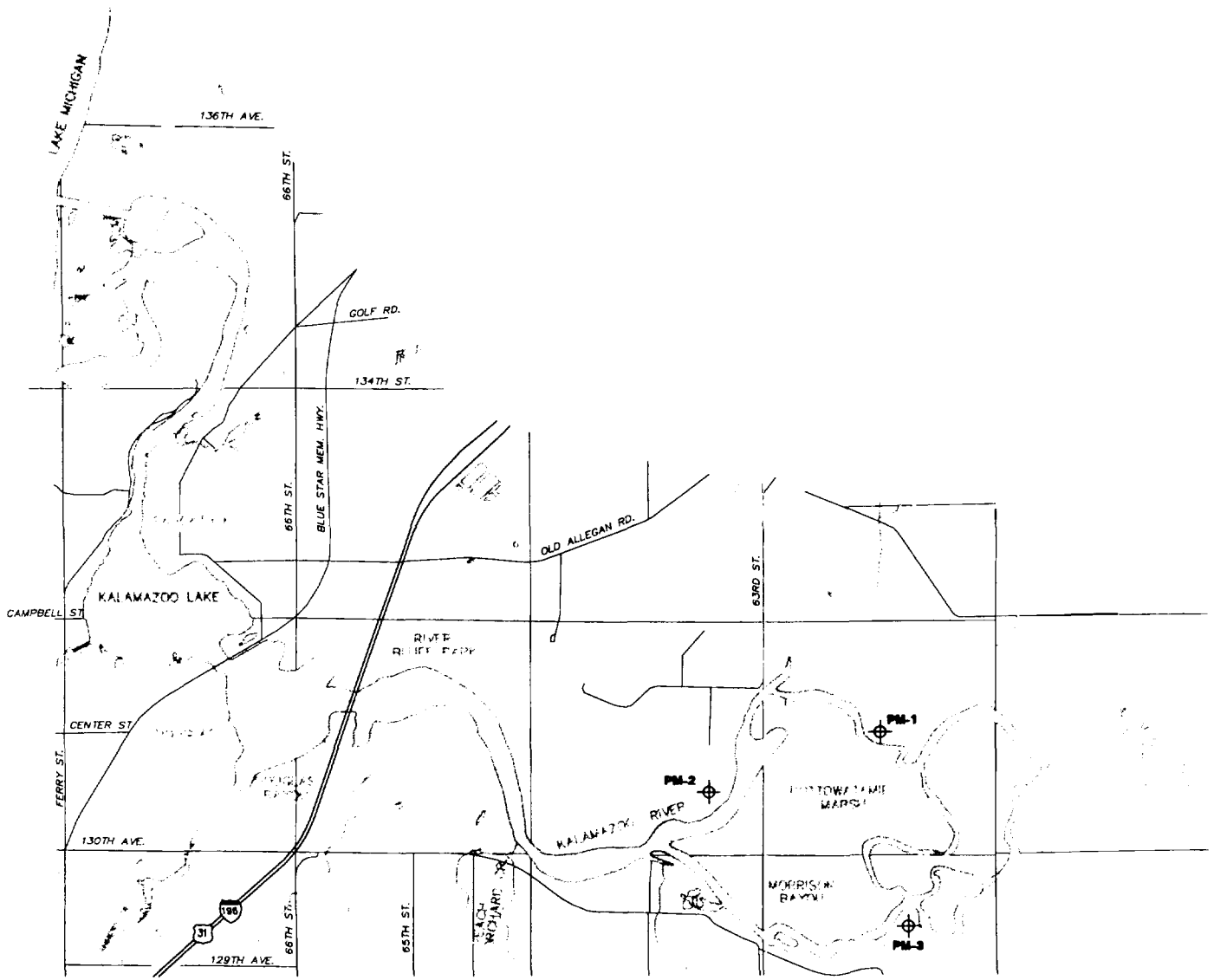
KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

OTTAWA MARSH-FLOODPLAIN SEDIMENT CORES OM-1 & OM-2

FIGURE **9**

2/94 RLP, YCC
84524378/FLOOD/84524607.DWG



LEGEND

PM-1 ⊕ SOIL/SEDIMENT CORE

KE60002236

0 2400' 4800'

SCALE: 1" = 2400'

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

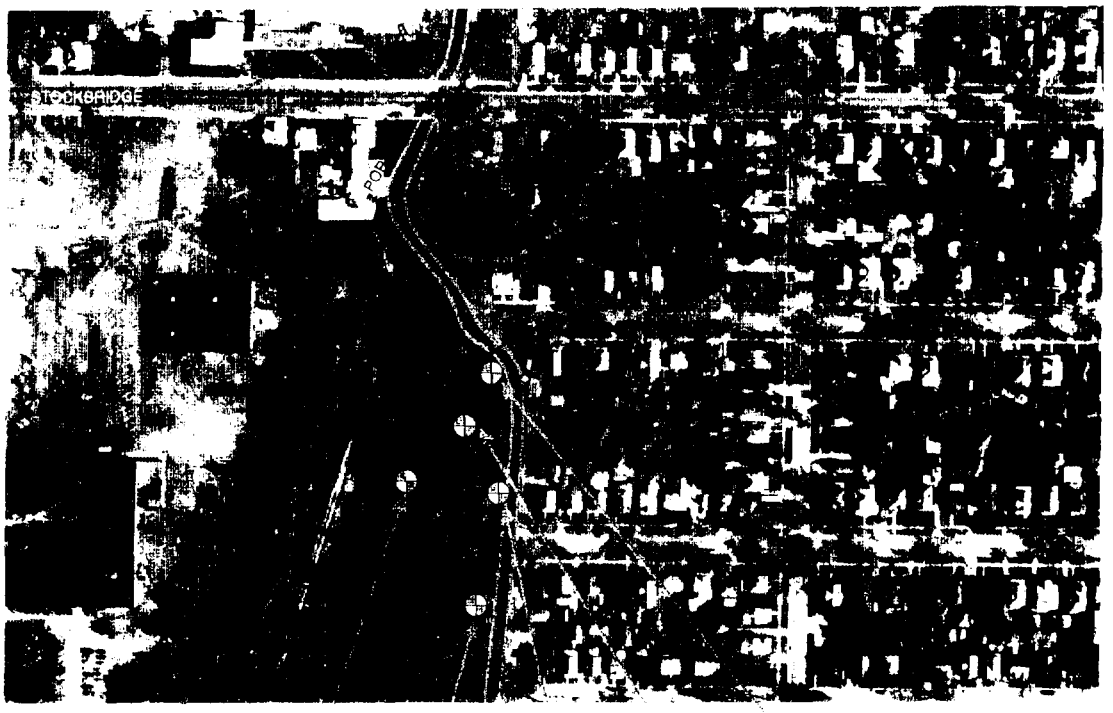
KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

POTTAWATAMIE MARSH-FLOODPLAIN SEDIMENT CORES PM1, PM2 & PM3

FIGURE **10**

2/84 54-RLP, YDC
6452437R/FLOOD/6452400LDWG



PLAN

APPROX. SCALE: 1"=200'

PF1-5	PF1-4	PF1-3	PF1-2	PF1-1
1.5	2.0	1.1/0.64	32	1.3
1.1	0.69	0.62	12	0.82

NOTES:

1. LIMITS OF THE 100-YEAR FLOODPLAIN ARE APPROXIMATE. DELINEATION OF 100-YEAR FLOODPLAIN IS BASED ON FEMA FLOOD INSURANCE STUDIES REVIEWED BY BLASLAND, BOUCK & LEE, INC. AND AVAILABLE TOPOGRAPHIC INFORMATION.
2. AERIAL PHOTOS BY LOCKWOOD MAPPING INC. IN 1991.
3. ALL ELEVATIONS ARE REFERENCED TO NGVD, 1929.
4. SURFACE ELEVATIONS HAVE BEEN EXTRAPOLATED BETWEEN KNOWN POINTS.
5. FLOODPLAIN LEVELS ARE INDICATED WITH THE YEAR OF THE FLOOD INSURANCE RATE MAP.

LEGEND:

APPROXIMATE 100-YEAR FLOODPLAIN LIMIT (1992)

FLOODPLAIN SOIL STATION LOCATION

PFI-3
1.1/0.64
0.62

STATION LOCATION NAME
PCB CONCENTRATION (ppm) 0-6" DEPTH
PCB CONCENTRATION (ppm) 0-12" DEPTH
PCB CONCENTRATION (ppm) 12-24" DEPTH

ND — NOT DETECTED

12/94 DSA DJH
6452037FV64520G01.CDR

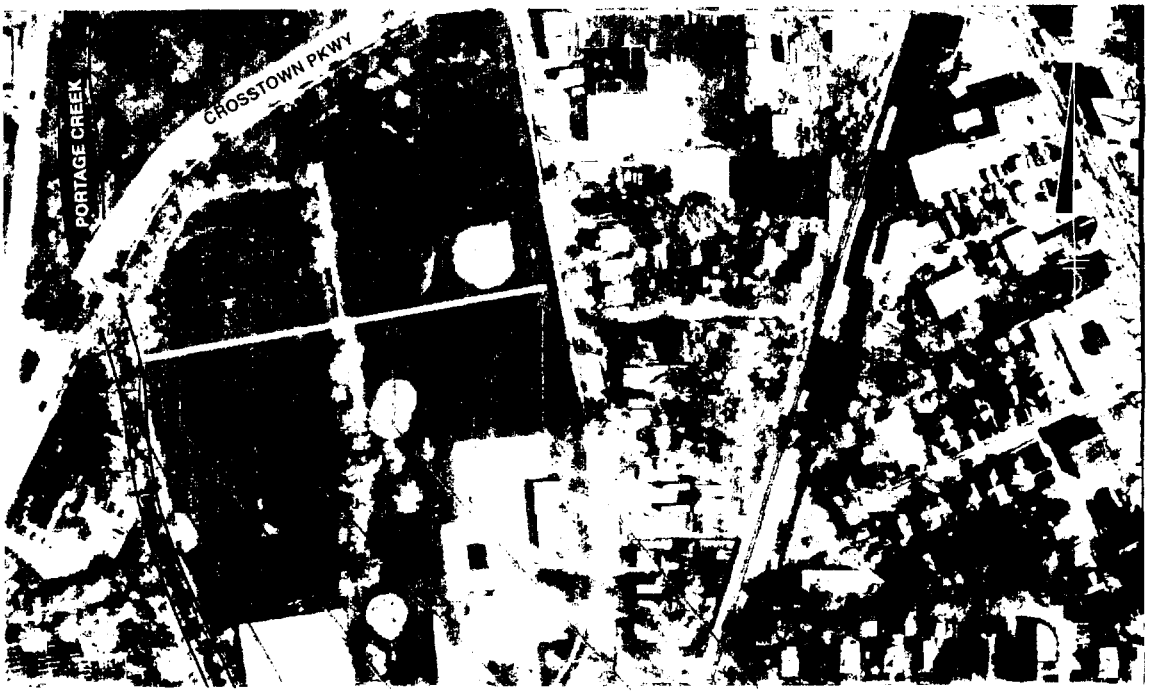
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP
A - FF PAPER, INCLUDE ALLEGAN CREEK/KALAMAZOO RIVER STUDY

FLOODPLAIN SOILS TECHNICAL MEMO

RANDOM PFI CORE SAMPLES PCB DATA

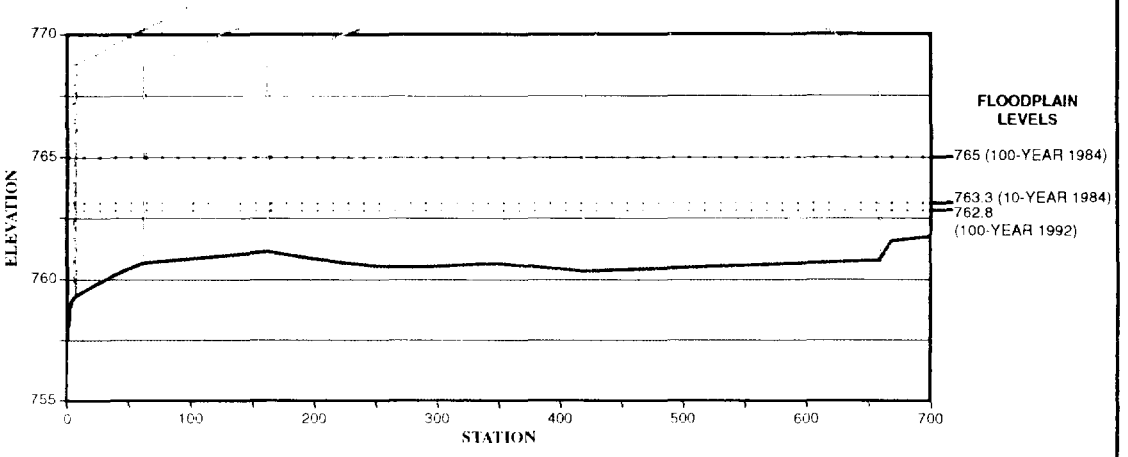
FIGURE 11



PLAN

APPROX. SCALE: 1"=200'

PF2-1	PF2-2	PF2-3	PF2-4	PF2-5
2.1	ND	ND	ND	ND
2.0	0.025	ND	ND	ND
1.7	ND			



CROSS SECTION

SCALE: HORIZ. 1" = 100', VERT. 1" = 5'

NOTES:

1. LIMITS OF THE 100 AND 10-YEAR FLOODPLAIN LEVELS ARE APPROXIMATE. DELINEATION OF FLOODPLAINS IS BASED ON FEMA FLOOD INSURANCE STUDIES REVIEWED BY BLASLAND, BOUCK & LEE, INC. AND AVAILABLE TOPOGRAPHIC INFORMATION.
2. AERIAL PHOTOS BY LOCKWOOD MAPPING INC. IN 1991.
3. ALL ELEVATIONS ARE REFERENCED TO NGVD, 1929.
4. SURFACE ELEVATIONS HAVE BEEN EXTRAPOLATED BETWEEN KNOWN POINTS.
5. FLOODPLAIN LEVELS ARE INDICATED WITH THE YEAR OF THE FLOOD INSURANCE RATE MAP.

LEGEND:

APPROXIMATE 100-YEAR FLOODPLAIN LIMIT (1992)

FLOODPLAIN TRANSECT

STATION LOCATION

PF2-1
2.1
2.0
1.7

STATION LOCATION NAME
PCB CONCENTRATION (ppm) 0-6" DEPTH
PCB CONCENTRATION (ppm) 6-12" DEPTH
PCB CONCENTRATION (ppm) 12-24" DEPTH

ND — NOT DETECTED

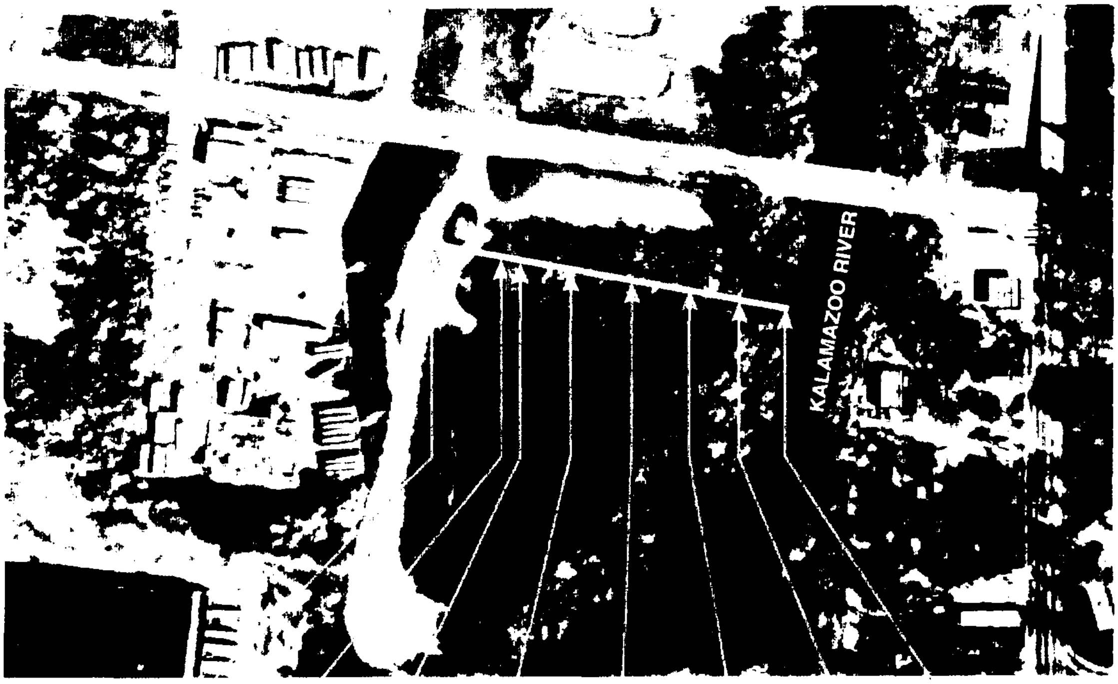
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP

FLOODPLAIN SOILS TECHNICAL MEMO

TRANSECT PF2
PCB DATA

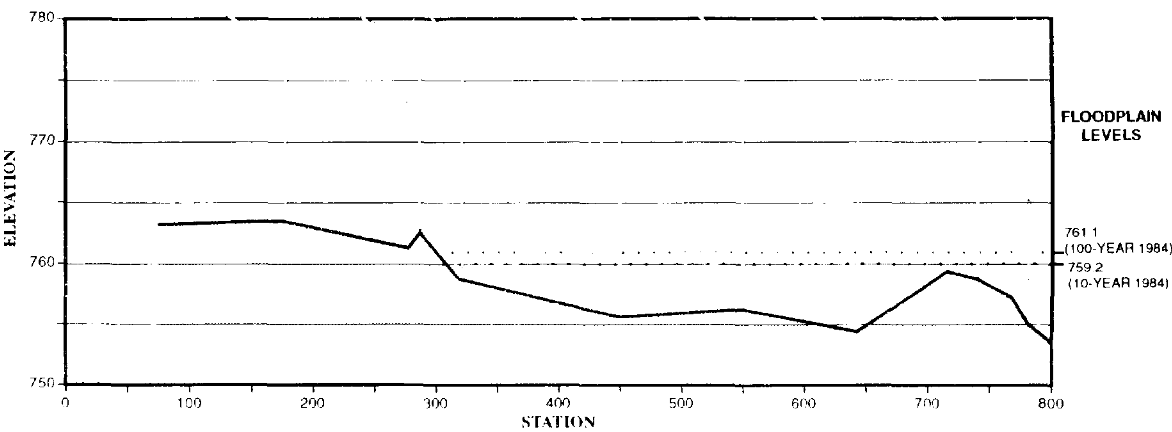
FIGURE 12



PLAN

APPROX. SCALE: 1"=200'

KF1-8	KF1-7	KF1-6	KF1-5	KF1-4	KF1-3	KF1-2	KF1-1
ND	ND/ND	ND	ND	ND	0.49	0.026	.47
ND	ND	ND	0.034	ND	0.028	ND	1.0
					0.071	ND/ND	0.066



CROSS SECTION

SCALE: HORIZ. 1" = 100', VERT. 1" = 10'

NOTES:

1. LIMITS OF THE 100 AND 10-YEAR FLOODPLAIN LEVELS ARE APPROXIMATE. DELINEATION OF FLOODPLAINS IS BASED ON FEMA FLOOD INSURANCE STUDIES REVIEWED BY BLASLAND, BOUCK & LEE, INC. AND AVAILABLE TOPOGRAPHIC INFORMATION.
2. AERIAL PHOTOS BY LOCKWOOD MAPPING INC. IN 1991.
3. ALL ELEVATIONS ARE REFERENCED TO NGVD, 1929.
4. SURFACE ELEVATIONS HAVE BEEN EXTRAPOLATED BETWEEN KNOWN POINTS.
5. FLOODPLAIN LEVELS ARE INDICATED WITH THE YEAR OF THE FLOOD INSURANCE RATE MAP.

LEGEND:

APPROXIMATE 100-YEAR FLOODPLAIN LIMIT (1992)

FLOODPLAIN TRANSECT

STATION LOCATION

KF1-3	STATION LOCATION NAME
0.49	PCB CONCENTRATION (ppm) 0-6" DEPTH
0.028	PCB CONCENTRATION (ppm) 6-12" DEPTH
0.071	PCB CONCENTRATION (ppm) 12-24" DEPTH
ND	NOT DETECTED

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

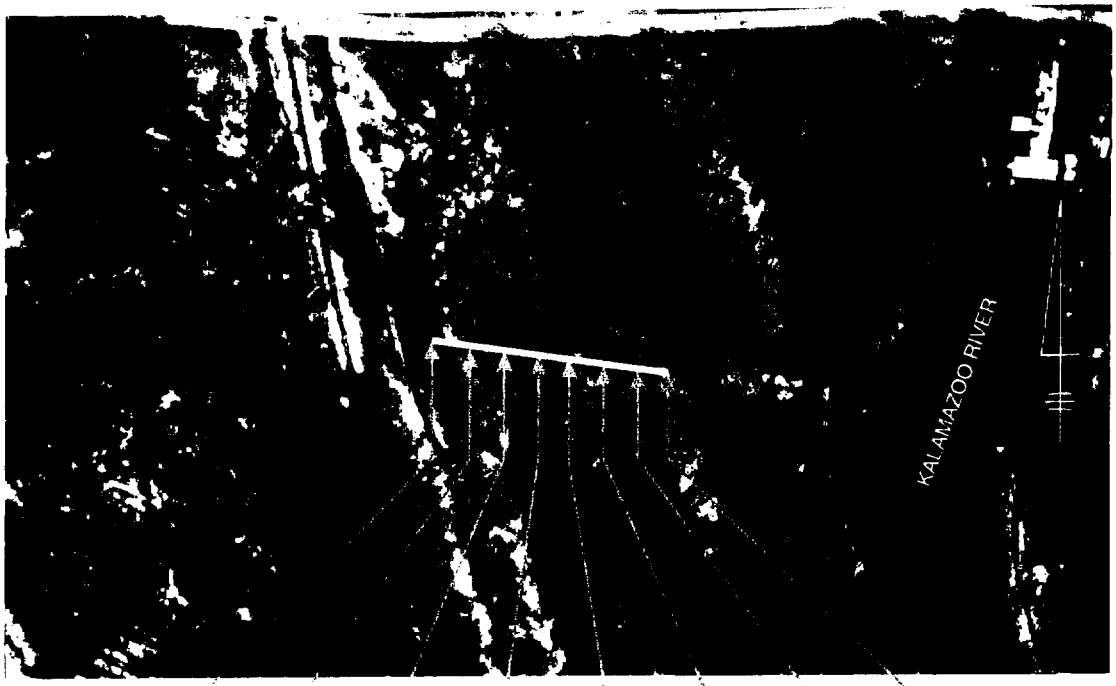
KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

TRANSECT KF1 PCB DATA

FIGURE 13

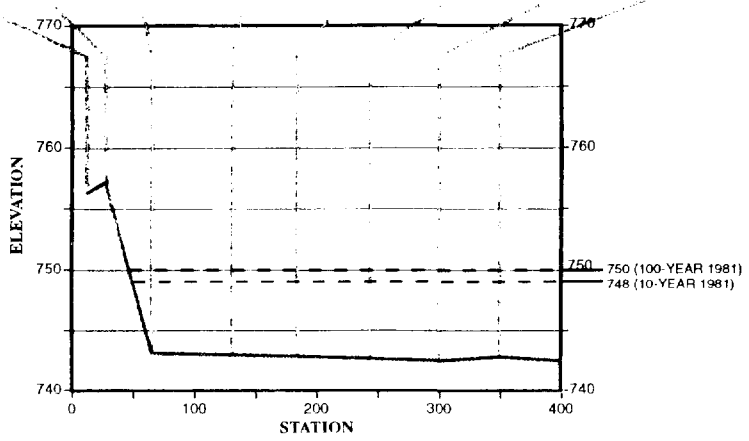
2/94 ... DJH
F452037B/6452XG03.CDR



PLAN

APPROX. SCALE: 1"=200'

KF2-8	KF2-7	KF2-6	KF2-5	KF2-4	KF2-3	KF2-2	KF2-1
ND	0.15	0.13	ND	ND	0.054	0.039	3.0
ND	ND	ND	ND	ND	ND	ND	0.79
						ND	0.25



CROSS SECTION

SCALE: HORIZ. 1" = 100', VERT. 1" = 10'

NOTES:

1. LIMITS OF THE 100 AND 10-YEAR FLOODPLAIN LEVELS ARE APPROXIMATE. FLOODPLAIN LEVELS WERE ESTIMATED BASED ON INFORMATION CONTAINED IN THE TOWNSHIP OF KALAMAZOO FEMA STUDY (1981).
2. AERIAL PHOTOS BY LOCKWOOD MAPPING INC. IN 1991.
3. ALL ELEVATIONS ARE REFERENCED TO NGVD, 1929.
4. SURFACE ELEVATIONS HAVE BEEN EXTRAPOLATED BETWEEN KNOWN POINTS.
5. FLOODPLAIN LEVELS ARE INDICATED WITH THE YEAR OF THE FLOOD INSURANCE RATE MAP.

LEGEND:

APPROXIMATE 100-YEAR FLOODPLAIN LIMIT (1992)

FLOODPLAIN TRANSECT

STATION LOCATION

KF2-1
3.0
0.79
0.25

SAMPLE LOCATION NAME
PCB CONCENTRATION (ppm) 0-6" DEPTH
PCB CONCENTRATION (ppm) 12-24" DEPTH

ND — NOT DETECTED

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

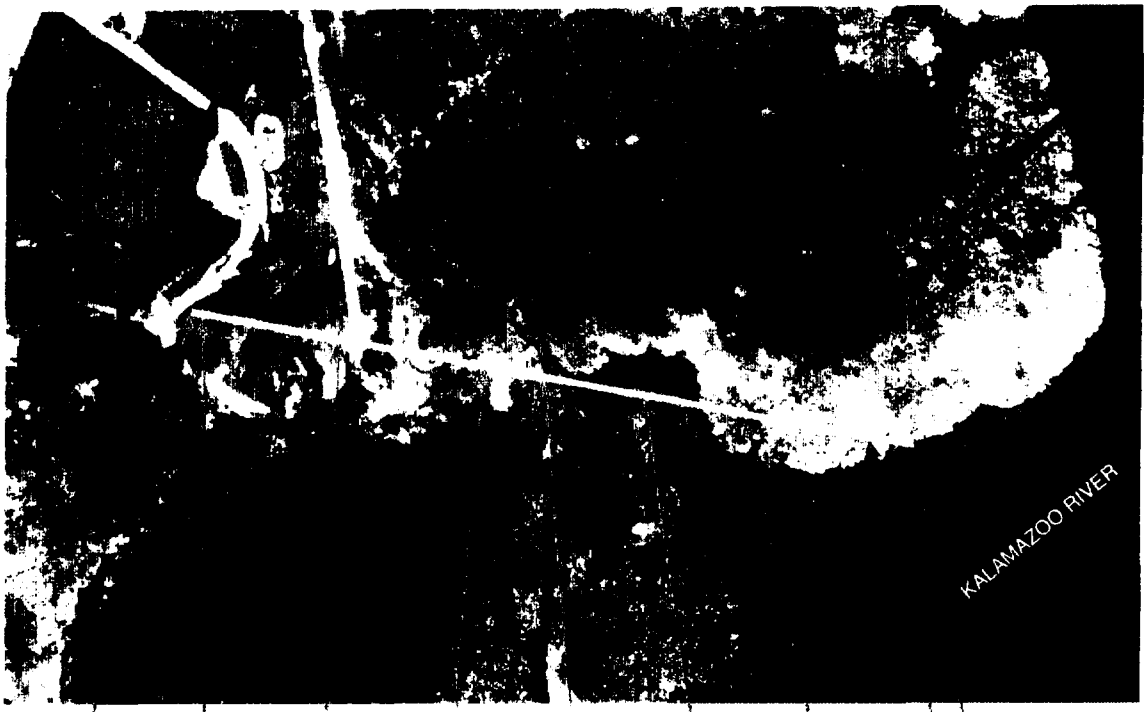
KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

TRANSECT KF2
PCB DATA

FIGURE 14

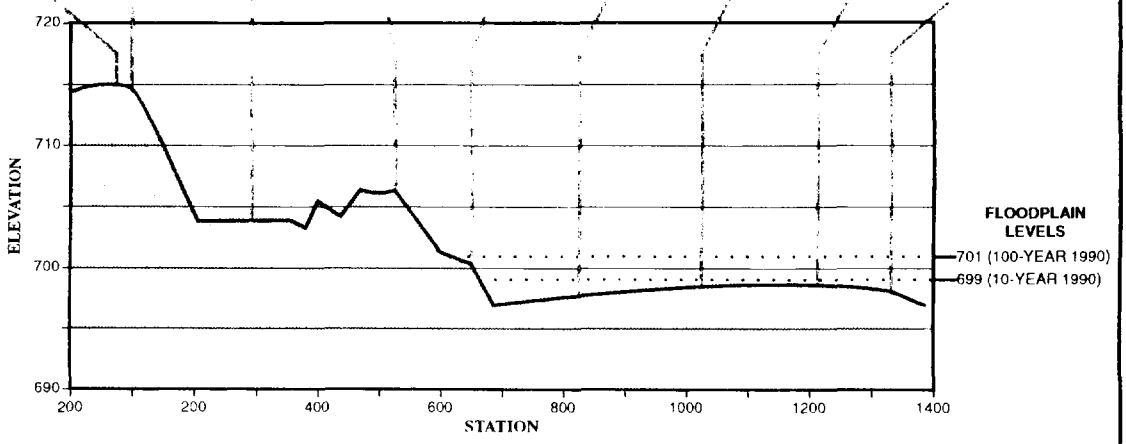
02/94 DSA DJH
6452037F/B4520304.CDR



PLAN

APPROX. SCALE: 1"=200'

KF3-9	KF3-8	KF3-7	KF3-6	KF3-5	KF3-4	KF3-3	KF3-2	KF3-1
ND	0.42	ND	ND	ND	2.0	0.76	1.8	1.1
	ND	ND	ND	ND	0.60	0.93	1.1/1.9	0.4
							0.24	ND



CROSS SECTION

SCALE: HORIZ. 1" = 100', VERT. 1" =10'

NOTES:

1. LIMITS OF THE 10-YEAR FLOODPLAIN LEVELS ARE APPROXIMATE. DELINEATION OF 10-YEAR FLOODPLAINS BASED ON A GZA-DONOHUE REPORT 1990. REVIEWED BY BLASLAND, BOUCK & LEE, INC. AND AVAILABLE TOPOGRAPHIC INFORMATION.
2. AERIAL PHOTOS BY LOCKWOOD MAPPING INC. IN 1991.
3. ALL ELEVATIONS ARE REFERENCED TO NGVD, 1929.
4. SURFACE ELEVATIONS HAVE BEEN EXTRAPOLATED BETWEEN KNOWN POINTS.
5. FLOODPLAIN LEVELS ARE INDICATED WITH THE YEAR OF THE FLOODPLAIN INSURANCE MAP.

LEGEND:

- APPROXIMATE 100-YEAR FLOODPLAIN LIMIT (1990)
- FLOODPLAIN TRANSECT
- STATION LOCATION
- KF3-3 — STATION LOCATION NAME
- 0.76 — PCB CONCENTRATION (ppm) 0-6" DEPTH
- 0.93 — PCB CONCENTRATION (ppm) 0-12" DEPTH
- PCB CONCENTRATION (ppm) 12-24" DEPTH
- ND — NOT DETECTED

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

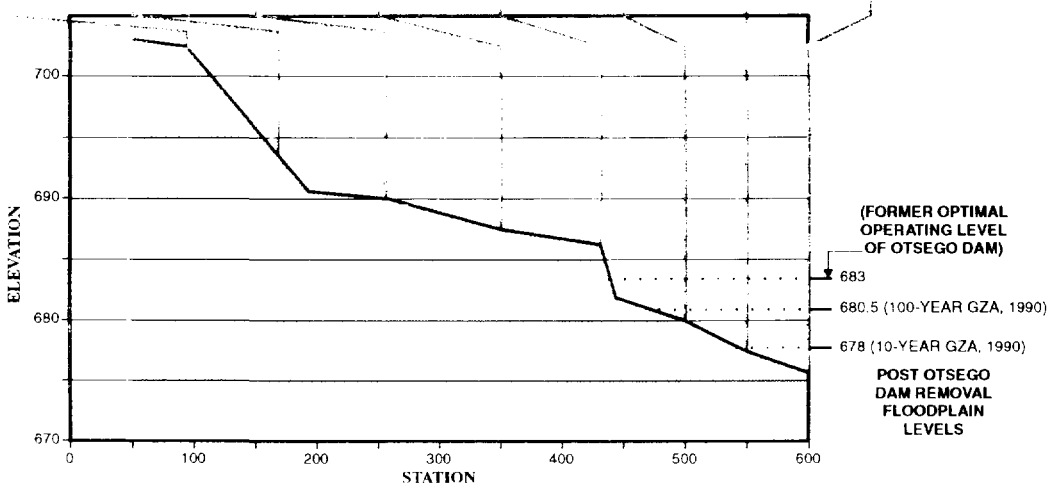
TRANSECT KF3
PCB DATA

FIGURE 15

02/94 DS4 DJH
645203TR\R4520G05.CDR

PLAN
APPROX. SCALE: 1"=200'

KF4-8	KF4-7	KF4-6	KF4-5	KF4-4	KF4-3	KF4-2	KF4-1
ND	ND	ND	0.038	ND	11	1.7	1.3
ND	ND	ND	ND	ND	NA	14	5.5
						11	7.4/3.4



CROSS SECTION

SCALE: HORIZ. 1" = 100', VERT. 1" = 10'

NOTES:

1. LIMITS OF THE 10-YEAR FLOODPLAIN LEVELS ARE APPROXIMATE. DELINEATION OF 10-YEAR FLOODPLAINS BASED ON A GZA-DONOHUE REPORT 1990. REVIEWED BY BLASLAND, BOUCK & LEE, INC. AND AVAILABLE TOPOGRAPHIC INFORMATION.
2. AERIAL PHOTOS BY LOCKWOOD MAPPING INC. IN 1991.
3. ALL ELEVATIONS ARE REFERENCED TO NGVD, 1929.
4. SURFACE ELEVATIONS HAVE BEEN EXTRAPOLATED BETWEEN KNOWN POINTS.

LEGEND:

APPROXIMATE 100-YEAR FLOODPLAIN LIMIT (1990)

FLOODPLAIN TRANSECT

STATION LOCATION

KF4-1
1.3
5.5
7.4/3.4

STATION LOCATION NAME
PCB CONCENTRATION (ppm) 0-6" DEPTH
PCB CONCENTRATION (ppm) 6-12" DEPTH
PCB CONCENTRATION (ppm) 12-24" DEPTH

ND NOT DETECTED

NA NOT ANALYZED

12/94 DS4 DJH
645203TR/64520G06.CDR

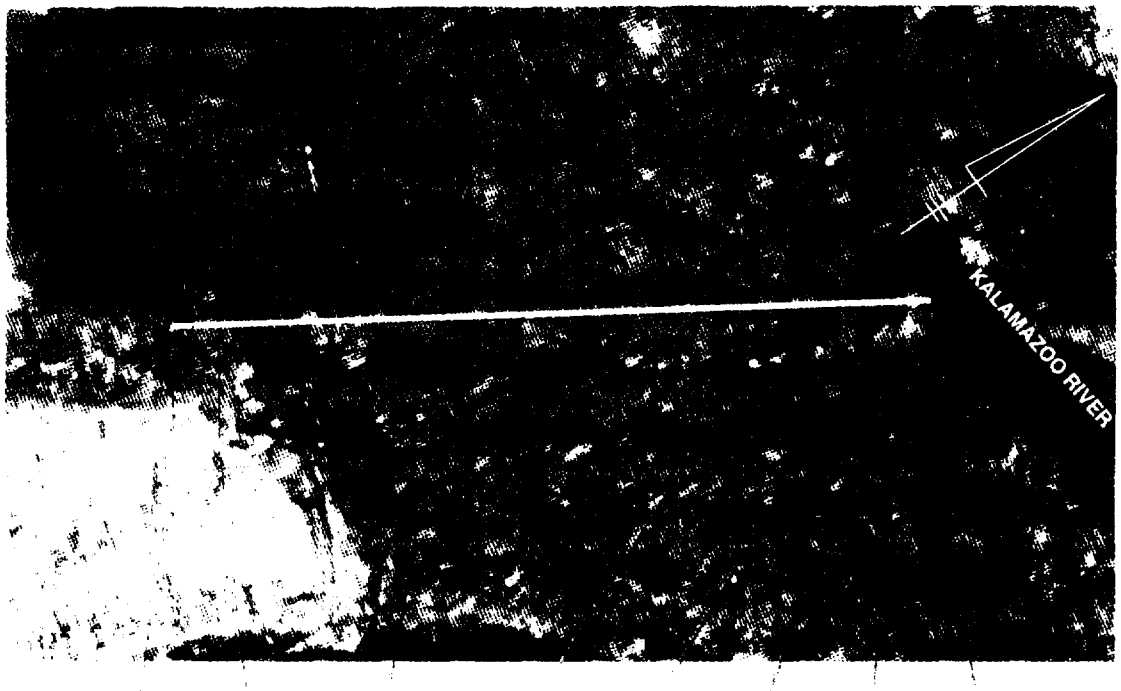
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP
A PAPER RECYCLING AREA KALAMAZOO RIVER STUDY

FLOODPLAIN SOILS TECHNICAL MEMO

TRANSECT KF4
PCB DATA

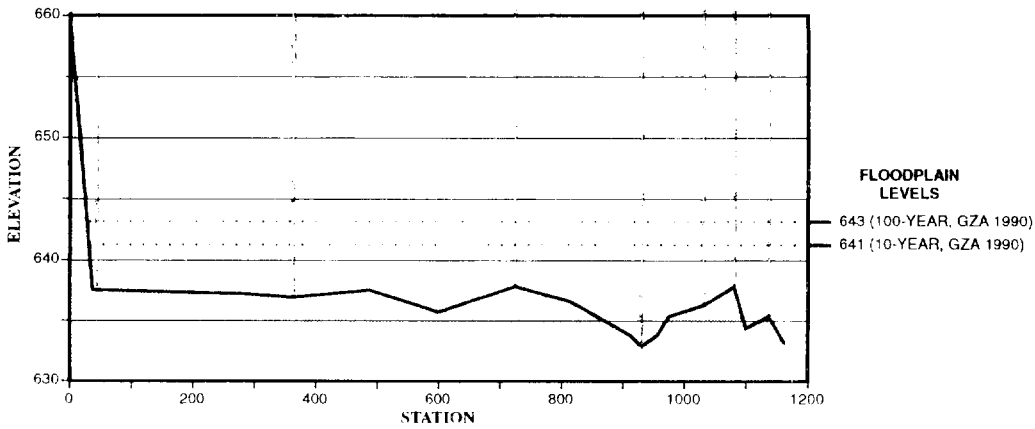
FIGURE 16



PLAN

APPROX. SCALE: 1"=200'

KF5-8	KF5-7	KF5-6	KF5-5	KF5-4	KF5-3	KF5-2	KF5-1
ND	ND	0.052	ND	2.8	0.15	0.071	1.6
ND/ND	ND	ND	ND/ND	0.35	ND	ND	1.1
						ND/ND	0.32



CROSS SECTION

SCALE: HORIZ. 1" = 200', VERT. 1" = 10'

NOTES:

1. LIMITS OF THE 10-YEAR FLOODPLAIN LEVELS ARE APPROXIMATE. DELINEATION OF 10-YEAR FLOODPLAINS BASED ON A GZA-DONAHUE REPORT 1990. REVIEWED BY BLASLAND, BOUCK & LEE, INC. AND AVAILABLE TOPOGRAPHIC INFORMATION.
2. AERIAL PHOTOS BY LOCKWOOD MAPPING INC. IN 1991.
3. ALL ELEVATIONS ARE REFERENCED TO NGVD, 1929.
4. SURFACE ELEVATIONS HAVE BEEN EXTRAPOLATED BETWEEN KNOWN POINTS.

LEGEND:

APPROXIMATE 100-YEAR FLOODPLAIN LIMIT (1990)

FLOODPLAIN TRANSECT

STATION LOCATION

KF5-1
1.6
1.1
0.32

STATION LOCATION NAME
PCB CONCENTRATION (ppm) 0-6" DEPTH
PCB CONCENTRATION (ppm) 6-12" DEPTH
PCB CONCENTRATION (ppm) 12-24" DEPTH

ND — NOT DETECTED

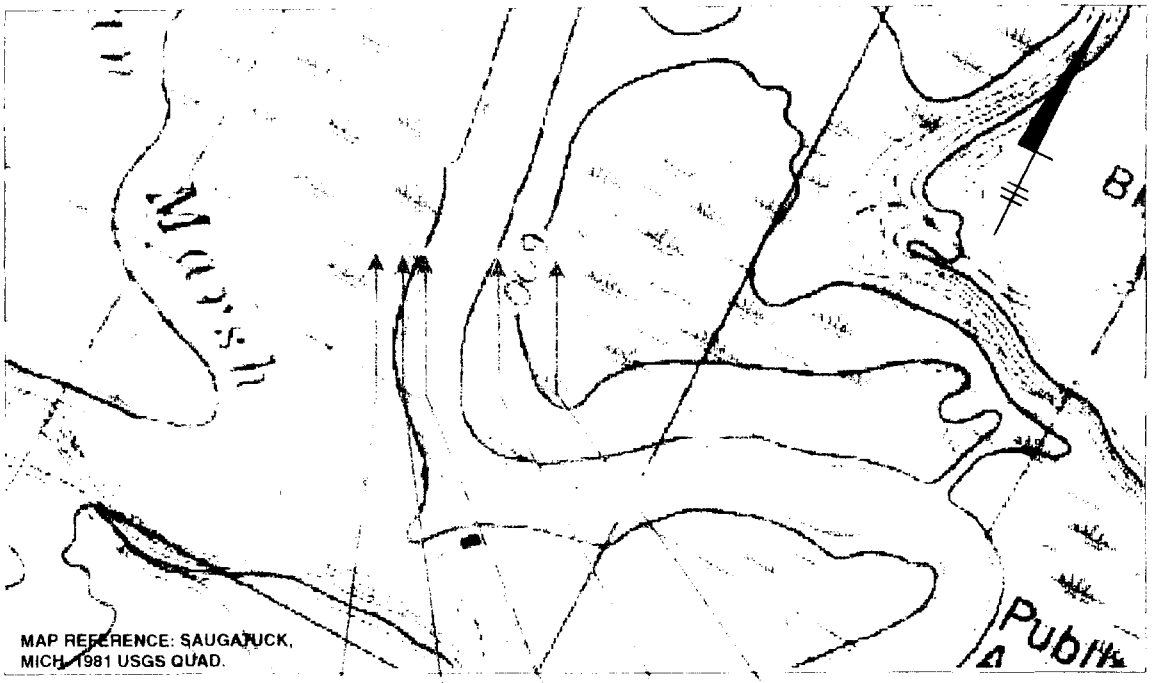
FIGURE 17

TRANSECT KF5 PCB DATA

FLOODPLAIN SOILS TECHNICAL MEMO

KALAMAZOO RIVER STUDY GROUP
A. E. F. BARFIELD, INCORPORATED, KALAMAZOO RIVER STUDY GROUP

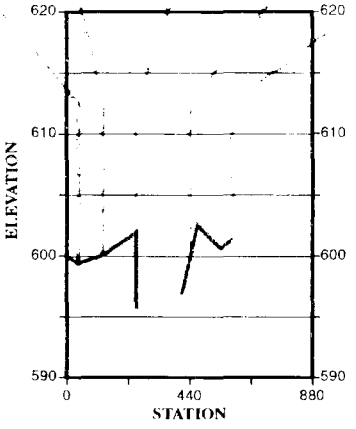
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS



PLAN

APPROX. SCALE: 1"=440'

KF6-5	KF6-4	KF6-3	KF6-2	KF6-1
3.4	0.17	0.092	0.29	0.27/0.19
0.15	ND/ND	ND	ND	0.036
0.17	ND	ND	ND	ND



CROSS SECTION

SCALE: HORIZ. 1" = 440', VERT. 1" = 10'

LEGEND:

FLOODPLAIN SOIL STATION LOCATION

STATION LOCATION

KF6-5	STATION LOCATION NAME
3.4	PCB CONCENTRATION (ppm) 0-6" DEPTH
0.15	PCB CONCENTRATION (ppm) 6-12" DEPTH
0.17	PCB CONCENTRATION (ppm) 12-24" DEPTH

ND NOT DETECTED

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

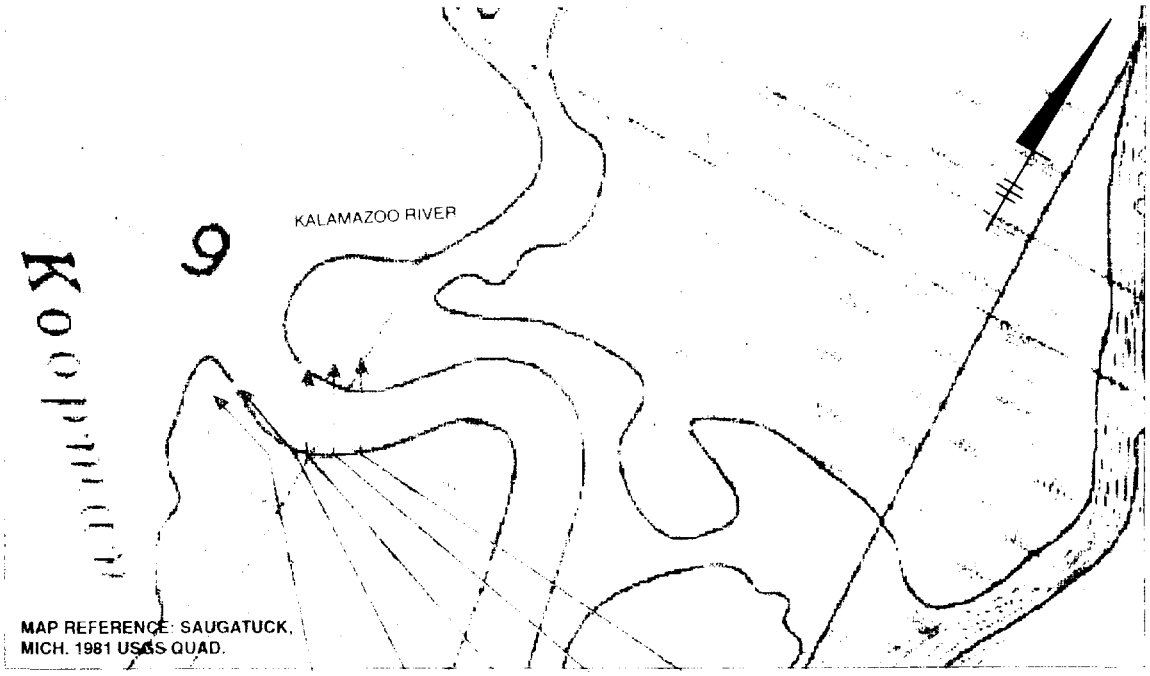
FLOODPLAIN SOILS TECHNICAL MEMO

TRANSECT KF6
PCB DATA

FIGURE 18

KE600224

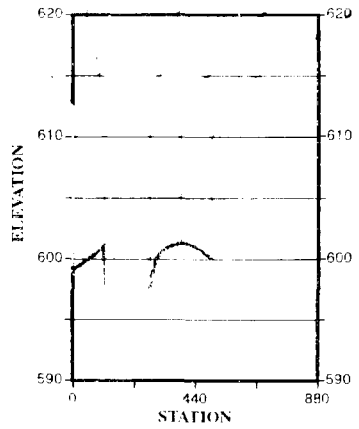
02/94 DSA DJH
6452\0178\6452GG08.CDR



PLAN

APPROX. SCALE: 1"=440'

KF7-5	KF7-4	KF7-3	KF7-2	KF7-1
0.74	ND/0.077	0.14	0.30	ND
0.40	0.038	0.027	0.034/ND	ND
ND	ND	0.39	ND	ND



CROSS SECTION

SCALE: HORIZ. 1" = 440', VERT. 1" = 10'

LEGEND:

FLOODPLAIN TRANSECT

STATION LOCATION

KF7-5
0.74
0.40
ND

STATION LOCATION NAME
PCB CONCENTRATION (ppm) 0-6" DEPTH
PCB CONCENTRATION (ppm) 6-12" DEPTH
PCB CONCENTRATION (ppm) 12-24" DEPTH

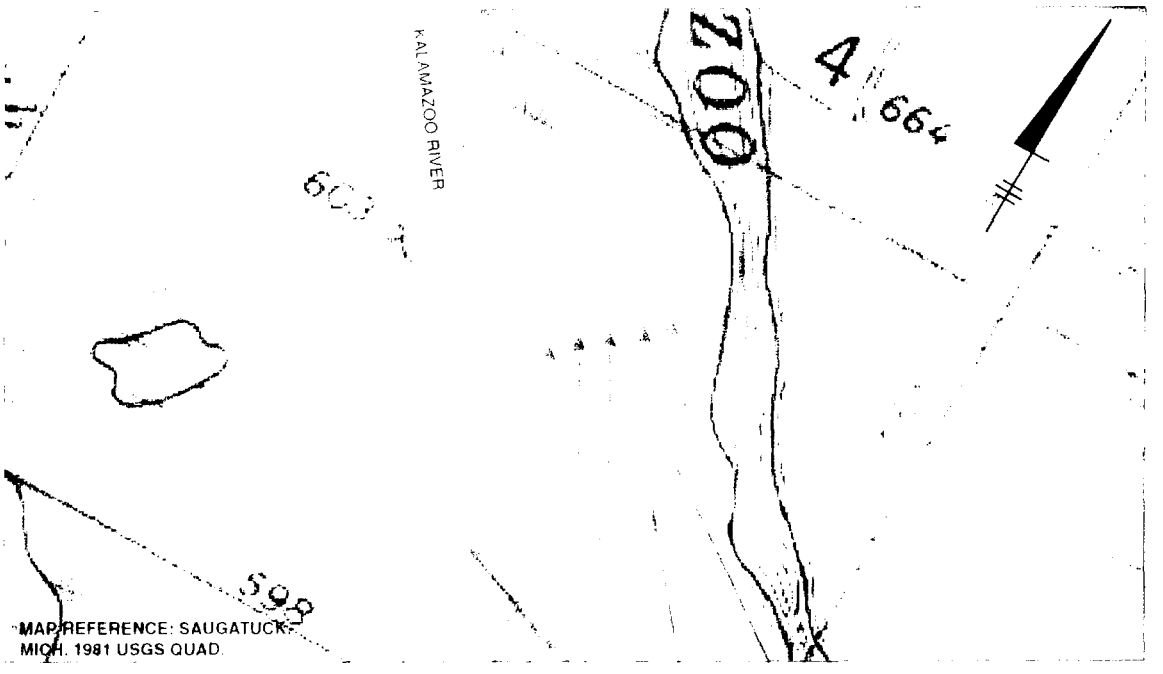
ND NOT DETECTED

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

FLOODPLAIN SOILS TECHNICAL MEMO

TRANSECT KF7
PCB DATA

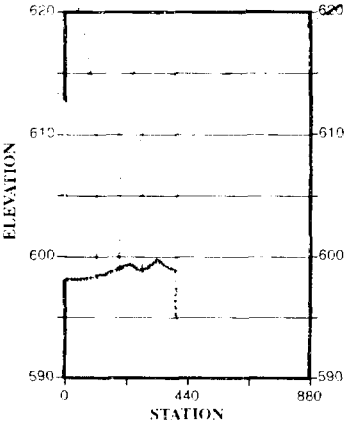
FIGURE 19



PLAN

APPROX. SCALE: 1"=440'

KF8-5	KF8-4	KF8-3	KF8-2	KF8-1
0.65	0.37	0.27	0.43	0.26
0.087	0.13	ND	ND	ND
ND/ND	ND	ND	ND/ND	ND



CROSS SECTION

SCALE: HORIZ. 1" = 440', VERT. 1" = 10'

LEGEND:

FLOODPLAIN TRANSECT

STATION LOCATION

KF8-5	STATION LOCATION NAME
0.65	PCB CONCENTRATION (ppm) 0-6" DEPTH
0.087	PCB CONCENTRATION (ppm) 6-12" DEPTH
ND/ND	PCB CONCENTRATION (ppm) 12-24" DEPTH

ND NOT DETECTED

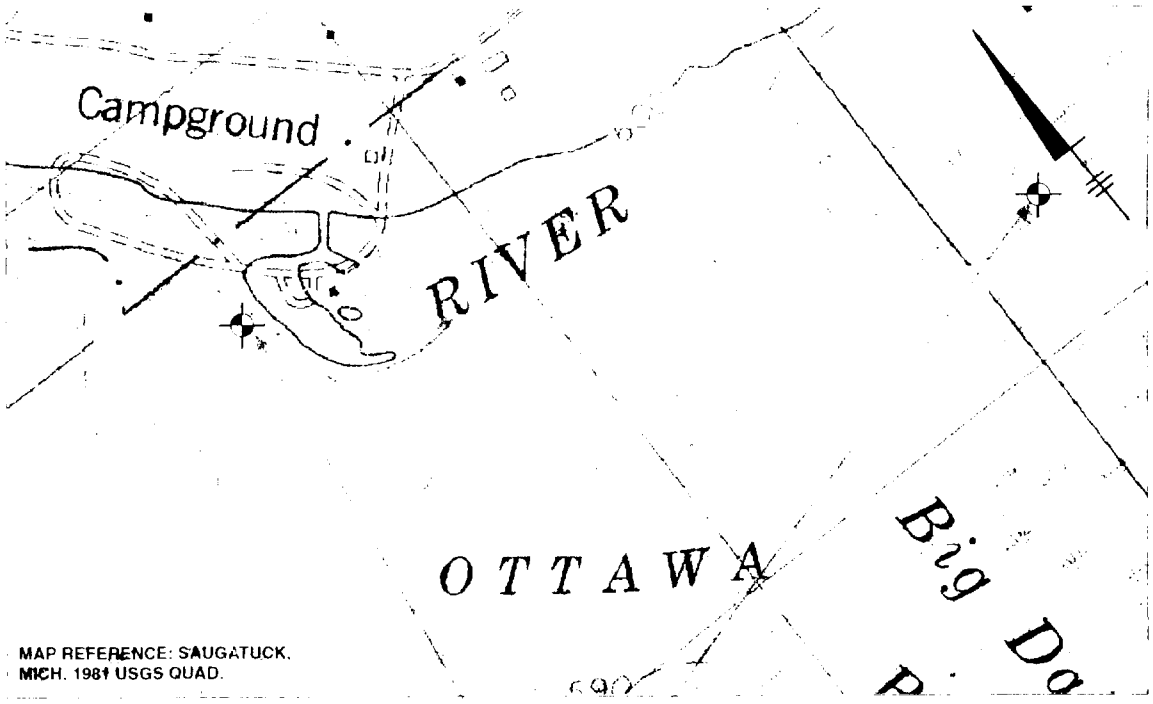
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

FLOODPLAIN SOILS TECHNICAL MEMO

TRANSECT KF8
PCB DATA

FIGURE 20

HE600224



MAP REFERENCE: SAUGATUCK, MICH. 1981 USGS QUAD.

PLAN
APPROX. SCALE 1"=530'

OM-2	OM-1
0.67	0.83
0.2	0.22
ND	0.15
ND	ND
ND	ND/ND

LEGEND:

FLOODPLAIN SOIL STATION LOCATION

OM-1	SAMPLE LOCATION NAME
0.83	PCB CONCENTRATION (ppm) 0-2" DEPTH
0.22	PCB CONCENTRATION (ppm) 2-6" DEPTH
0.15	PCB CONCENTRATION (ppm) 6-12" DEPTH
ND	PCB CONCENTRATION (ppm) 12-24" DEPTH
ND/ND	PCB CONCENTRATION (ppm) 24-36" DEPTH

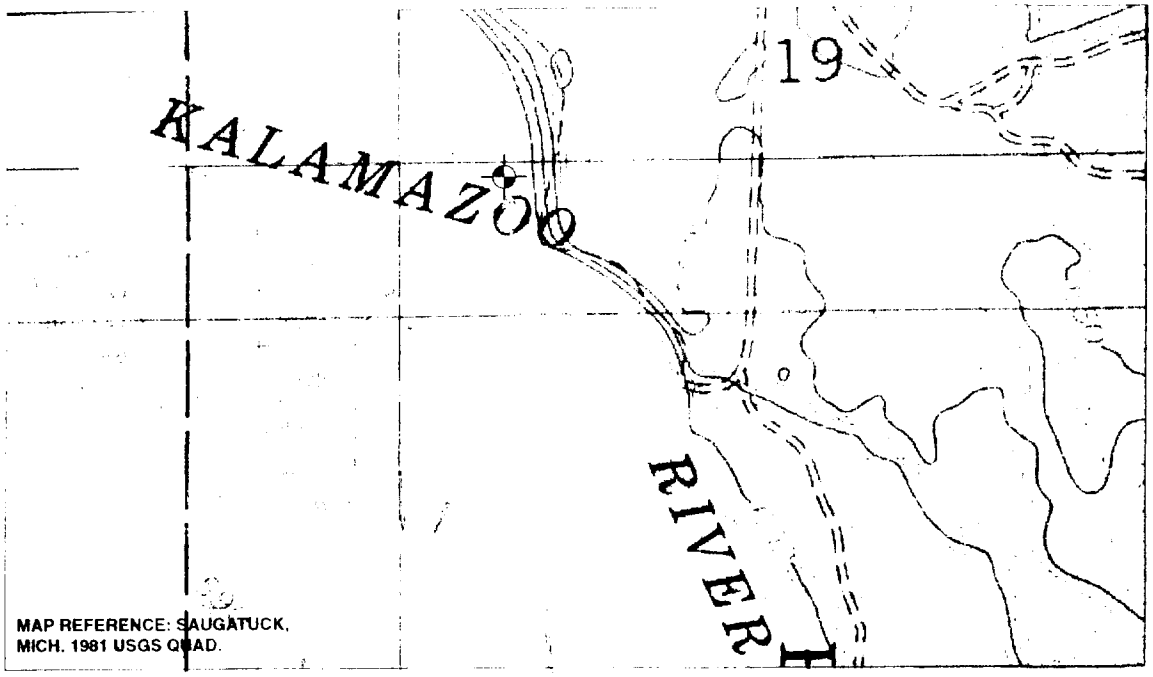
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP

FLOODPLAIN SOILS TECHNICAL MEMO

CORE SAMPLES
OM1 & OM2 PCB DATA

FIGURE 21



PLAN
APPROX. SCALE: 1"=530'

OM-3
0.44
0.037
ND
ND

LEGEND:

FLOODPLAIN SOIL STATION LOCATION

OM-3	SAMPLE LOCATION NAME
0.44	PCB CONCENTRATION (ppm) 0-2" DEPTH
0.037	PCB CONCENTRATION (ppm) 2-6" DEPTH
ND	PCB CONCENTRATION (ppm) 6-12" DEPTH
ND	PCB CONCENTRATION (ppm) 12-24" DEPTH

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

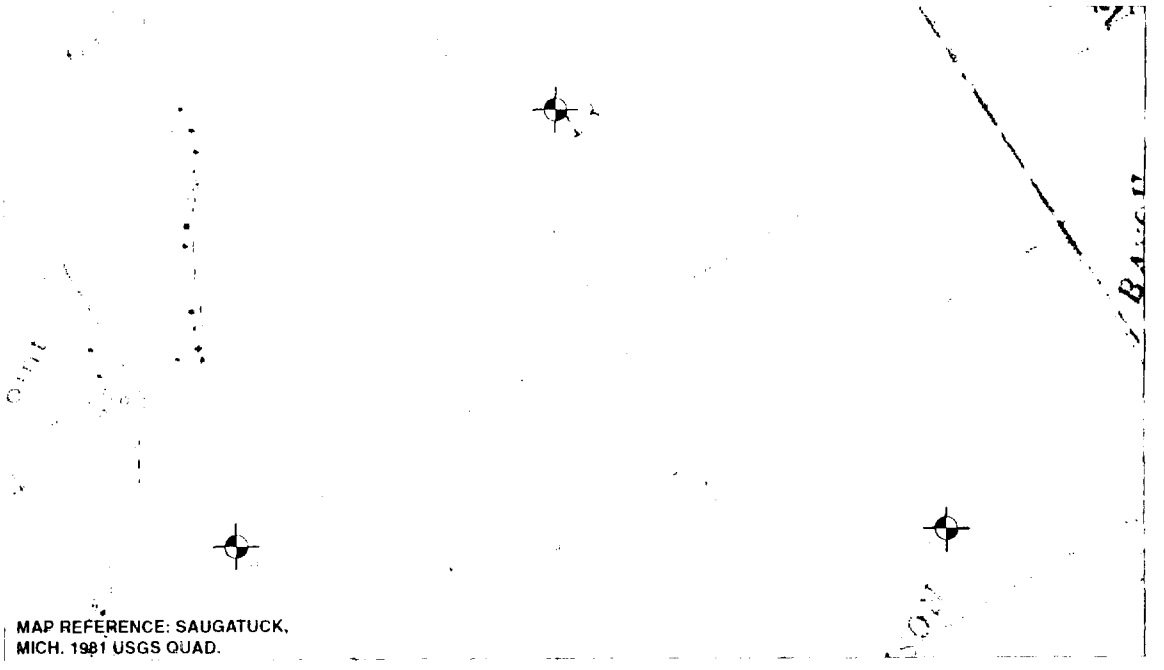
KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

CORE SAMPLES OM-3

FIGURE 22

KE600002248



MAP REFERENCE: SAUGATUCK, MICH. 1981 USGS QUAD.

PLAN

APPROX. SCALE: 1"=800'

PM-2	PM-1	PM-3
0.96	0.38	0.68
1.1	0.21/0.14	0.099
0.16/0.8	ND	ND
ND	ND	ND
	ND	ND

LEGEND:

FLOODPLAIN SOIL STATION LOCATION

PM-3
0.68
0.099
ND
ND
ND

SAMPLE LOCATION NAME
PCB CONCENTRATION (ppm) 0-2" DEPTH
PCB CONCENTRATION (ppm) 2-6" DEPTH
PCB CONCENTRATION (ppm) 6-12" DEPTH
PCB CONCENTRATION (ppm) 12-24" DEPTH
PCB CONCENTRATION (ppm) 24-36" DEPTH

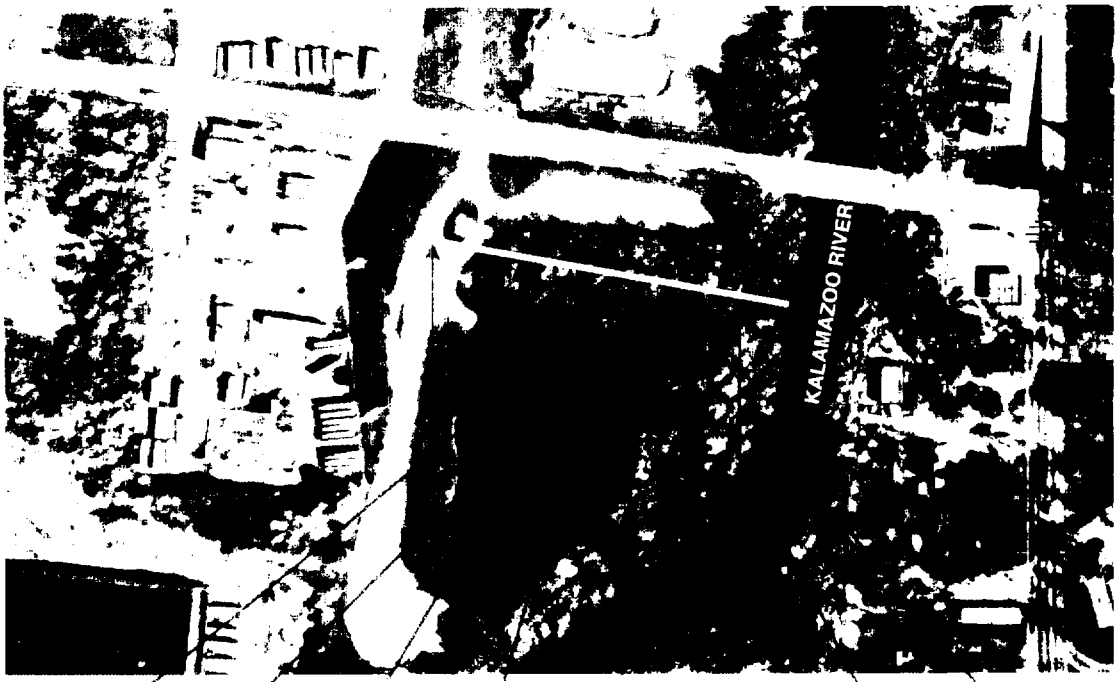
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KA AMANTIC RIVER STUDY GROUP

FLOODPLAIN SOILS TECHNICAL MEMO

CORE SAMPLES PM1, PM2, & PM3 PCB DATA | FIGURE **23**

PE600/2240



PLAN
APPROX. SCALE:
1"=200'

KF1-3			
		Compound	Conc. (mg/kg)
A (0-6' Depth)	TCL Pesticides	4,4'-DDE	0.018J
		4,4'-DDD	0.0079J
		4,4'-DDT	0.020J
		alpha-chlordane	0.0084JN
		gamma-chlordane	0.0035J
	TCL Semi-Volatiles	naphthalene	0.029J
		2-methylnaphthalene	0.040J
		phenanthrene	0.24J
		anthracene	0.044J
		carbazole	0.041J
		di-n-butylphthalate	0.050J
		fluoranthene	0.46J
		pyrene	0.35J
		butylbenzylphthalate	0.063J
		benzo(a)anthracene	0.20J
		chrysene	0.27J
		bis(2-ethylhexyl)phthalate	0.26J
		benzo(b)fluoranthene	0.29J
		benzo(k)fluoranthene	0.23J
		benzo(a)pyrene	0.21J
		indeno(1,2,3-cd)pyrene	0.096J
		benzo(g,h,i)perylene	0.098J
B (6-12" Depth)	TCL Pesticides	4,4'-DDE	0.0030,0.0057
	TCL Semi-Volatiles	phenanthrene	0.10,0.03J
		anthracene	0.02J
		fluoranthene	0.15,0.06J
		pyrene	0.13,0.05J
		benzo(a)anthracene	0.062J,0.044J
		chrysene	0.087J,0.046J
		benzo(b)fluoranthene	0.071J,0.045J
		benzo(k)fluoranthene	0.071J,0.039J
		benzo(a)pyrene	0.083J,0.044J
		indeno(1,2,3-cd)pyrene	0.052J,0.030J
		benzo(g,h,i)perylene	0.024J

NOTES:

1. TABLE SHOWS ONLY THE RESULTS FOR COMPOUNDS DETECTED ABOVE QUANTITATION LIMIT.
2. AERIAL PHOTOS BY LOCKWOOD MAPPING INC, 1991

J - THE COMPOUND WAS POSITIVELY IDENTIFIED. HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY

JN - THE ANALYSIS INDICATES THE PRESENCE OF A COMPOUND FOR WHICH THERE IS PRESUMPTIVE EVIDENCE TO MAKE A TENTATIVE IDENTIFICATION. THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.

LEGEND:

APPROXIMATE 100-YEAR FLOODPLAIN LIMIT (1990)

FLOODPLAIN TRANSECT

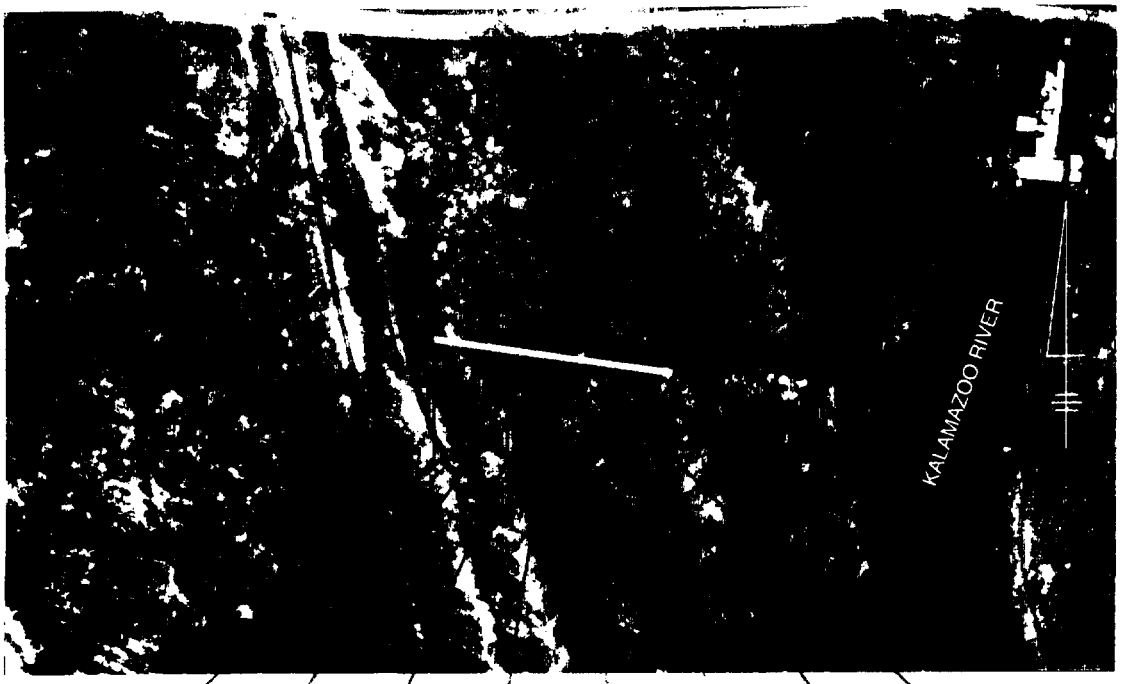
STATION LOCATION

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

FLOODPLAIN SOILS TECHNICAL MEMO

TRANSECT KF1
TCL DETECTIONS

FIGURE 24



PLAN
APPROX. SCALE:
1"=200'

KF2-8	KF2-7	KF2-6	KF2-5	KF2-4	KF2-3	KF2-2	KF2-1

		Compound	Conc. (mg/kg)
A (0.5' Depth)	TCL Semi-Volatiles	fluoranthene	0.12J
		pyrene	0.12J
		benzo(a)anthracene	0.081J
		chrysene	0.097J
		benzo(b)fluoranthene	0.14J
		benzo(a)pyrene	0.10JB

NOTES:

1. TABLE SHOWS ONLY THE RESULTS FOR COMPOUNDS DETECTED ABOVE QUANTITATION LIMIT.
2. AERIAL PHOTOS BY LOCKWOOD MAPPING INC. 1991.

J - THE COMPOUND WAS POSITIVELY IDENTIFIED. HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.

B - THE COMPOUND WAS FOUND IN THE SAMPLE AS WELL AS ITS ASSOCIATED BLANK. THEREFORE ITS PRESENCE IN THE SAMPLE MAY BE SUSPECT.

LEGEND:

APPROXIMATE 100-YEAR FLOODPLAIN LIMIT (1990)

FLOODPLAIN TRANSECT

STATION LOCATION

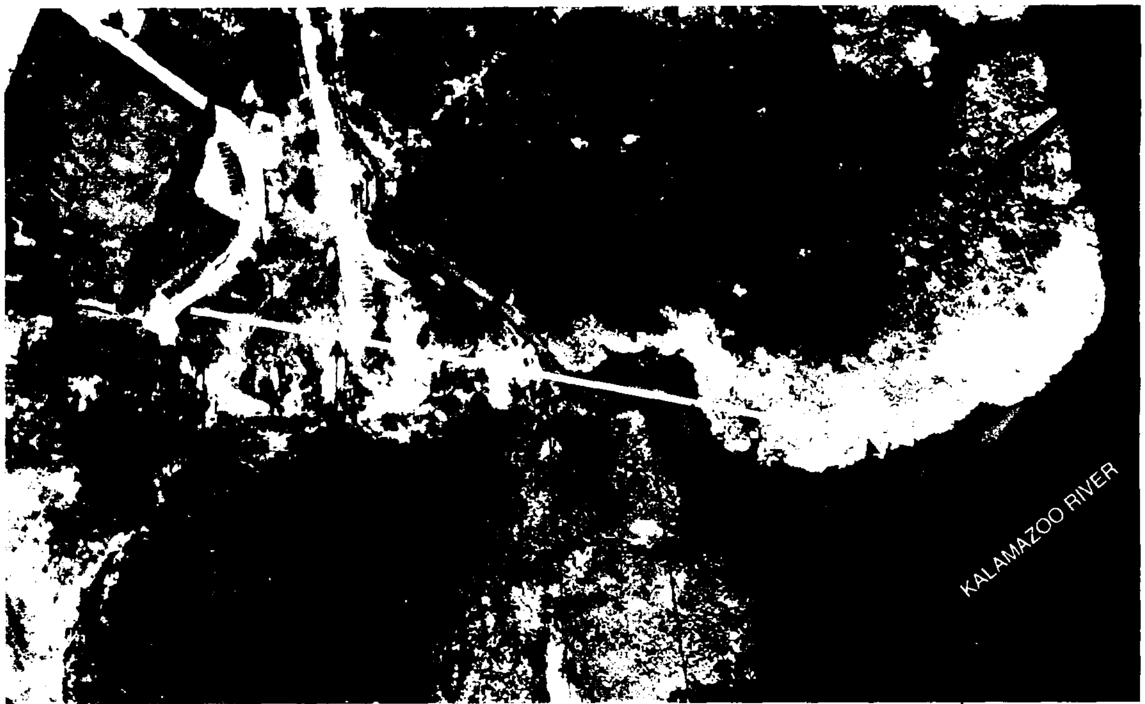
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP
A...

FLOODPLAIN SOILS TECHNICAL MEMO

TRANSECT KF2
TCL DETECTIONS

FIGURE 25



PLAN

APPROX. SCALE 1"=200'

KF3-9	KF3-8	KF3-7	KF3-6	KF3-5	KF3-4	KF3-3	KF3-2	KF3-1

KF3-1		Compound	Conc. (mg/kg)
A (0-6 Depth)	TCL Volatiles	acetone	0.049
	TCL Semi-Volatiles	phenanthrene	0.30J
		di-n-butyl-phthalate	0.20J
		fluoranthene	0.62J
		pyrene	0.55J
		benzo(a)anthracene	0.34J
		chrysene	0.42J
		bis(2-ethylhexyl)phthalate	0.32J
	TCL Pesticides	aldrin	0.022
		endosulfan I	0.0062JN
		4,4'-DDE	0.014J
		endrin-aldehyde	0.013JN
		alpha-chlordane	0.0098JN
		gamma-chlordane	0.0082J
B (6-12 Depth)	TCL Semi-Volatiles	fluoranthene	0.27J
		pyrene	0.25J
	TCL Pesticides	aldrin	0.011J

NOTES:

1. TABLE SHOWS ONLY THE RESULTS FOR COMPOUNDS DETECTED ABOVE QUANTITATION LIMIT.
2. AERIAL PHOTOS BY LOCKWOOD MAPPING INC. 1991.

J - THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.

JN - THE ANALYSIS INDICATES THE PRESENCE OF A COMPOUND FOR WHICH THERE IS PRESUMPTIVE EVIDENCE TO MAKE A TENTATIVE IDENTIFICATION. THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.

LEGEND:

- - - - - - - APPROXIMATE 100-YEAR FLOODPLAIN LIMIT (1990)

FLOODPLAIN TRANSECT

▲ STATION LOCATION

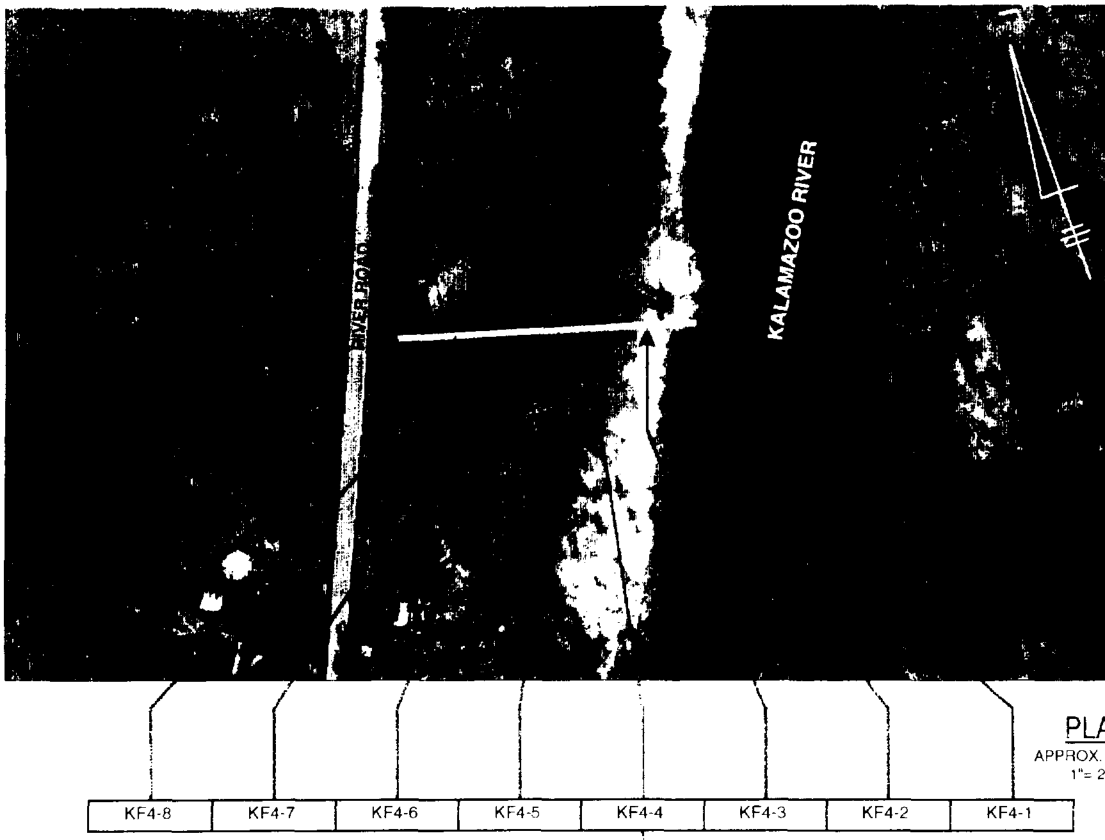
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

TRANSECT KF3
TCL DETECTIONS

FIGURE 26



PLAN
APPROX. SCALE:
1"= 200'

KF4-4			
		Compound	Conc. (mg/kg)
B *(6-12' Depth)*	TCL *Volatiles*	*toluene*	0.0020J

NOTES:

1. TABLE SHOWS ONLY THE RESULTS FOR COMPOUNDS DETECTED ABOVE QUANTITATION LIMIT.
2. AERIAL PHOTOS BY LOCKWOOD MAPPING INC. 1991.

J - THE COMPOUND WAS POSITIVELY IDENTIFIED HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY

LEGEND:

- - - - APPROXIMATE 100-YEAR FLOODPLAIN LIMIT (1992)

FLOODPLAIN TRANSECT

STATION LOCATION

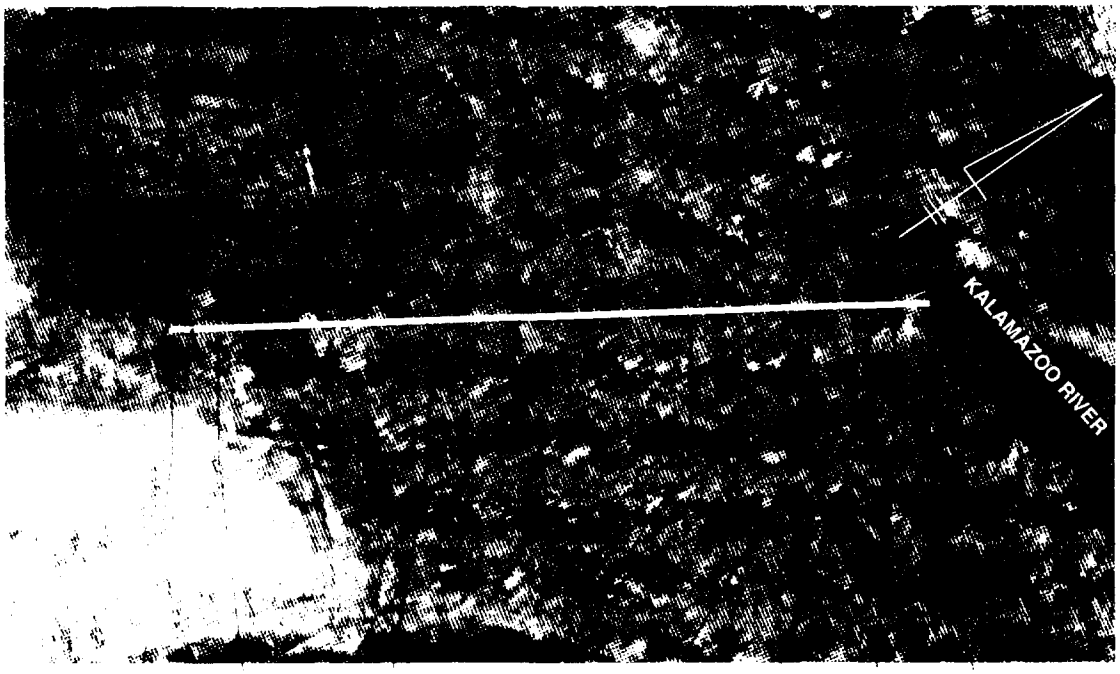
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP

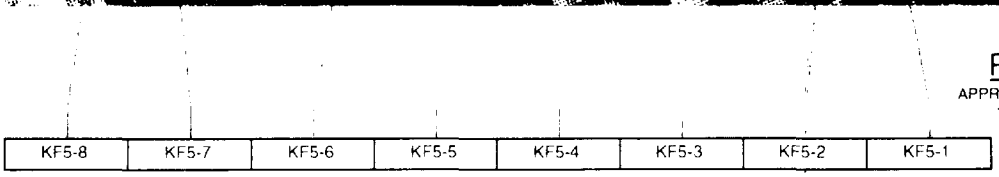
FLOODPLAIN SOILS TECHNICAL MEMO

TRANSECT KF4
TCL DETECTIONS

FIGURE **27**



PLAN
APPROX. SCALE:
1"=200'



KF5-2			
		Compound	Conc. (mg/kg)
A (0-6" Depth)	TCL Volatiles	toluene	0.0020J
	TCL Semi-Volatiles	phenanthrene	0.053J
		fluoranthene	0.12J
		pyrene	0.11J
		benzo(a)anthracene	0.075J
		chrysene	0.083J
		benzo(b)fluoranthene	0.10J
	TCL Pesticides	endosulfan I	0.0027
		endrin	0.0023J
B (6-12" Depth)	TCL Volatiles	toluene	0.0030J
	TCL Semi-Volatiles	fluoranthene	0.047J
		pyrene	0.046J
		benzo(a)anthracene	0.035J
		chrysene	0.041J
		benzo(b)fluoranthene	0.041J

NOTES:

1. TABLE SHOWS ONLY THE RESULTS FOR COMPOUNDS DETECTED ABOVE QUANTITATION LIMIT
2. AERIAL PHOTOS BY LOCKWOOD MAPPING INC. 1991.

J - THE COMPOUND WAS POSITIVELY IDENTIFIED. HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY

LEGEND:

APPROXIMATE 100-YEAR FLOODPLAIN LIMIT (1992)

FLOODPLAIN TRANSECT

STATION LOCATION

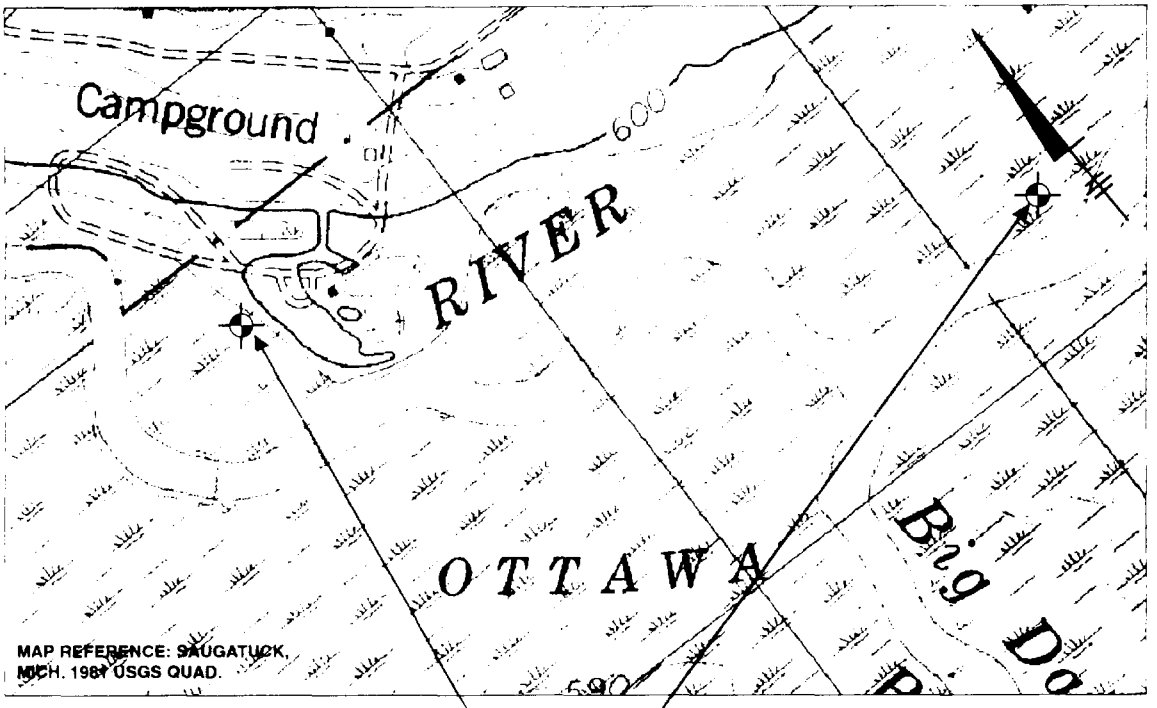
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER STUDY AREA

FLOODPLAIN SOILS TECHNICAL MEMO

TRANSECT KF5
TCL DETECTIONS

FIGURE 28



MAP REFERENCE: SAUGATUCK, MICH. 1987 USGS QUAD.

PLAN
APPROX. SCALE: 1"=530'

OM-2 | OM-1

OM-1B

		Compound	Conc. (mg/kg)
B (2-6" Depth)	TCL Semi-Volatiles	fluoranthene	0.087J
		pyrene	0.082J
		benzo(a)anthracene	0.093J
		chrysene	0.077J
		benzo(b)fluoranthene	0.095J
		benzo(k)fluoranthene	0.049J
		benzo(a)pyrene	0.082J
		indeno(1,2,3-cd)pyrene	0.085J
		dibenzo(a,h)anthracene	0.049J
		benzo(g,h,i)perylene	0.073J
	TCL Pesticides	aldrin	0.0023J
		4,4'-DDE	0.0062
		endrin-aldehyde	0.0046J
		alpha-chlordane	0.0017J

NOTES:

1. TABLE SHOWS ONLY THE RESULTS FOR COMPOUNDS DETECTED ABOVE QUANTITATION LIMIT.

J - THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.

LEGEND:

FLOODPLAIN SOIL STATION LOCATION

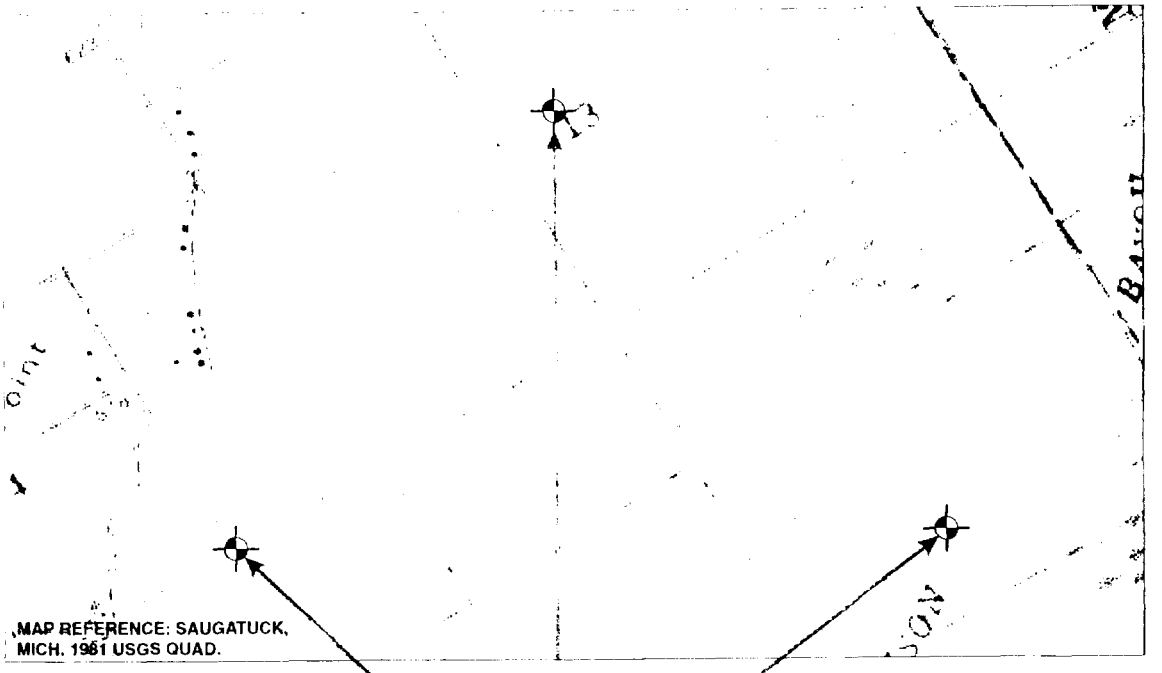
BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

CORE SAMPLES OM1 & OM2 TCL DETECTIONS | FIGURE **29**

02/94 064.01
6451537R/64515g08.CDR



PLAN

APPROX. SCALE: 1"=800'

PM-2 | PM-1 | PM-3

PM-1

		Compound	Conc. (mg/kg)
B (2-6' Depth)	TCL Volatiles	acetone	0.031/0.025J
	TCL Semi-Volatiles	pyrene	0.032J
	TCL Pesticides	aldrin	0.0039/0.0029J
		4,4'-DDE	0.0039J

NOTES:

1. TABLE SHOWS ONLY THE RESULTS FOR COMPOUNDS DETECTED ABOVE QUANTITATION LIMIT.

J - THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY

LEGEND:

FLOODPLAIN SOIL STATION LOCATION

BLASLAND, BOUCK & LEE, INC.
ENGINEERS & SCIENTISTS

KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

FLOODPLAIN SOILS TECHNICAL MEMO

CORE SAMPLES PM1, PM2, & PM3 TCL DETECTIONS | FIGURE **30**

02/04 - DS4 DJH
645153 FP/645153G07.CDR

Appendices

Appendix A
Field Reports

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10013 Location: KF2-1A
Date collected: 07/08/93 Time collected: 0845 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT, SOME ROOTS, TRACE OF FINE SAND
Is there TCL/TAL data? no

Sample ID:K10014 Location: KF2-1B
Date collected: 07/08/93 Time collected: 0850 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT, MOIST, TRACE OF FINE SAND
Is there TCL/TAL data? no

Sample ID:K10015 Location: KF2-1C
Date collected: 07/08/93 Time collected: 0900 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN MOIST SILT TO WET LIGHT BROWN MEDIUM TO COARSE SAND, SHELLS
Is there TCL/TAL data? no

Sample ID:K10016 Location: KF2-2A
Date collected: 07/08/93 Time collected: 0910 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN SILT, ROOTS WITH FINE SAND
Is there TCL/TAL data? no

Sample ID:K10017 Location: KF2-2B
Date collected: 07/08/93 Time collected: 0920 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN SILT WITH ORANGE-BROWN FINE SAND, SOME ROOTS
Is there TCL/TAL data? no

Sample ID:K10018 Location: KF2-2C
Date collected: 07/08/93 Time collected: 0930 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN & ORANGE-BROWN FINE TO MEDIUM SILTY SAND, TRACE OF GRAVEL, MOIST
Is there TCL/TAL data? no

Sample ID:K10019 Location: KF2-3A
Date collected: 07/08/93 Time collected: 1000 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT, SOME FINE SAND, ROOTS
Is there TCL/TAL data? yes

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10020 Location: KF2-3B
Date collected: 07/08/93 Time collected: 1010 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT TO ORANGE-BROWN AND GREY-BROWN FINE SAND
Is there TCL/TAL data? yes

Sample ID:K10021 Location: KF2-4A
Duplicate of: K10022
Date collected: 07/08/93 Time collected: 1040 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
VERY MOIST DARK BROWN SILT, ORGANIC MATTER AND ROOTS
Is there TCL/TAL data? no

Sample ID:K10022 Location: D-2
Duplicate of: K10021
Date collected: 07/08/93 Time collected: 1040 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
VERY MOIST DARK BROWN SILT, ORGANIC MATTER AND ROOTS
Is there TCL/TAL data? no

Sample ID:K10023 Location: KF2-4B
Date collected: 07/08/93 Time collected: 1050 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
WET DARK BROWN SILT WITH ROOTS
Is there TCL/TAL data? no

Sample ID:K10024 Location: KF2-5A
Date collected: 07/08/93 Time collected: 1100 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
VERY MOIST DARK BROWN SILT, ROOTS, ORGANIC MATTER
Is there TCL/TAL data? no

Sample ID:K10025 Location: KF2-5B
Date collected: 07/08/93 Time collected: 1110 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
WET DARK BROWN SILT, SOME ROOTS, TRACE OF FINE SAND
Is there TCL/TAL data? no

Sample ID:K10026 Location: KF2-6A
Date collected: 07/08/93 Time collected: 1130 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
WET DARK BROWN SILT, SOME ROOTS
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10027 Location: KF2-6B
Date collected: 07/08/93 Time collected: 1140 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
VERY WET DARK BROWN SILT AND ROOTS TO MOIST GREY-BROWN FINE TO MEDIUM SAND
Is there TCL/TAL data? no

Sample ID:K10028 Location: KF2-7A
Date collected: 07/08/93 Time collected: 1200 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT, ORGANIC MATTER, SOME ROOTS
Is there TCL/TAL data? no

Sample ID:K10029 Location: KF2-7B
Date collected: 07/08/93 Time collected: 1210 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
VERY WET DARK BROWN SILT AND ORGANIC MATTER
Is there TCL/TAL data? no

Sample ID:K10030 Location: KF2-8A
Date collected: 07/08/93 Time collected: 1220 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: COARSE Sample method: AUGER
Sample description:
LIGHT BROWN MEDIUM TO COARSE SAND, SOME GRAVEL
Results of immunoassay test: less than 1 mg/kg
Is there TCL/TAL data? no

Sample ID:K10031 Location: KF2-8B (MS/MSD)
Date collected: 07/08/93 Time collected: 1230 Water depth: 0.00 ft
Depth: 5.00 to 1.00 ft Soil type: COARSE Sample method: AUGER
Sample description:
LIGHT BROWN MEDIUM TO COARSE SAND AND GRAVEL
Results of immunoassay test: less than 1 mg/kg
Is there TCL/TAL data? no

Sample ID:K10032 Location: RB-2 (RINSE BLANK)
Date collected: 07/08/93 Time collected: 1415 Water depth: 0.00 ft
Depth: 0.00 to 0.00 ft Soil type: Sample method: AUGER
Is there TCL/TAL data? no

Sample ID:K10033 Location: KF4-1A (MS-TOC)
Date collected: 07/08/93 Time collected: 1445 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SANDY SILT WITH ROOTS
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10034 Location: KF4-1B
Date collected: 07/08/93 Time collected: 1455 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT WITH ROOTS TO GREY CLAY WITH ROOTS
Is there TCL/TAL data? no

Sample ID:K10035 Location: KF4-1C
Duplicate of: K10036
Date collected: 07/08/93 Time collected: 1505 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
GREY TO BLACK SILT, STRONG ORGANIC ODOR
Is there TCL/TAL data? no

Sample ID:K10036 Location: D-3
Duplicate of: K10035
Date collected: 07/08/93 Time collected: 1505 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
GREY TO BLACK SILT, STRONG ORGANIC ODOR
Is there TCL/TAL data? no

Sample ID:K10037 Location: KF4-2A
Date collected: 07/08/93 Time collected: 1525 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN VERY WET SILT, ORGANIC MATTER, ROOTS
Is there TCL/TAL data? no

Sample ID:K10038 Location: KF4-2B
Date collected: 07/08/93 Time collected: 1535 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT WITH ROOTS TO GREY CLAY WITH ROOTS
Is there TCL/TAL data? no

Sample ID:K10039 Location: KF4-2C
Date collected: 07/08/93 Time collected: 1545 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
GREY-BROWN CLAY
Is there TCL/TAL data? no

Sample ID:K10040 Location: KF4-3A
Date collected: 07/08/93 Time collected: 1550 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
GREY-BROWN CLAY
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10041 Location: KF4-3B
Date collected: 07/08/93 Time collected: 1555 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
GREY-BROWN CLAY, RED-BROWN SAND AT 12"
Is there TCL/TAL data? no

Sample ID:K10042 Location: KF4-4A
Date collected: 07/08/93 Time collected: 1605 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
LIGHT BROWN FINE SANDY SILT, SOME GRAVEL
Is there TCL/TAL data? yes

Sample ID:K10043 Location: KF4-4B
Date collected: 07/08/93 Time collected: 1610 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN SILTY FINE SAND, SOME GRAVEL
Is there TCL/TAL data? yes

Sample ID:K10044 Location: KF4-5A
Date collected: 07/08/93 Time collected: 1620 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SANDY SILT
Is there TCL/TAL data? no

Sample ID:K10045 Location: KF4-5B
Date collected: 07/08/93 Time collected: 1625 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
ORANGE-BROWN FINE SILTY SAND
Is there TCL/TAL data? no

Sample ID:K10046 Location: KF4-6A
Duplicate of: K10047
Date collected: 07/08/93 Time collected: 1630 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
LIGHT BROWN FINE SANDY SILT
Is there TCL/TAL data? no

Sample ID:K10047 Location: D-4
Duplicate of: K10046
Date collected: 07/08/93 Time collected: 1630 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
LIGHT BROWN FINE SANDY SILT
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10048 Location: KF4-6B
Date collected: 07/08/93 Time collected: 1640 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN SILTY FINE SAND
Is there TCL/TAL data? no

Sample ID:K10049 Location: KF4-7A
Date collected: 07/08/93 Time collected: 1645 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SAND, TRACE OF SILT
Is there TCL/TAL data? no

Sample ID:K10050 Location: KF4-7B
Date collected: 07/08/93 Time collected: 1650 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SAND
Is there TCL/TAL data? no

Sample ID:K10051 Location: KF4-8A (MS/MSD)
Date collected: 07/08/93 Time collected: 1700 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
FINE SAND AND SOME SILT WITH ROOTS, BROWN
Results of immunoassay test: less than 1 mg/kg
Is there TCL/TAL data? no

Sample ID:K10052 Location: KF4-8B
Date collected: 07/08/93 Time collected: 1705 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
FINE BROWN SAND
Results of immunoassay test: less than 1 mg/kg
Is there TCL/TAL data? no

Sample ID:K10053 Location: KF3-1A
Date collected: 07/09/93 Time collected: 0845 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
DARK BROWN SILT, ROOTS, ORGANIC MATTER
Is there TCL/TAL data? yes

Sample ID:K10054 Location: KF3-1B
Date collected: 07/09/93 Time collected: 0855 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT, ROOTS, SOME ORGANIC MATTER
Is there TCL/TAL data? yes

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10055 Location: KF3-1C
Date collected: 07/09/93 Time collected: 0910 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
VERY WET BROWN SILT AND PEAT MATERIAL
Is there TCL/TAL data? no

Sample ID:K10056 Location: KF3-2A
Date collected: 07/09/93 Time collected: 0920 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT, ROOTS, SOME ORGANIC MATTER
Is there TCL/TAL data? no

Sample ID:K10057 Location: KF3-2B
Duplicate of: K10058
Date collected: 07/09/93 Time collected: 0930 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT, ROOTS, ORGANIC MATTER
Is there TCL/TAL data? no

Sample ID:K10058 Location: D-5
Duplicate of: K10057
Date collected: 07/09/93 Time collected: 0930 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT, ROOTS, ORGANIC MATTER
Is there TCL/TAL data? no

Sample ID:K10059 Location: KF3-2C
Date collected: 07/09/93 Time collected: 0940 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT AND ORGANIC MATTER TO BROWN SILT AND PEAT
Is there TCL/TAL data? no

Sample ID:K10060 Location: KF3-3A
Date collected: 07/09/93 Time collected: 1000 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT, A LOT OF ROOTS AND ROOT MASS, ORGANIC MATTER
Is there TCL/TAL data? no

Sample ID:K10061 Location: KF3-3B
Date collected: 07/09/93 Time collected: 1010 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT, ROOTS, ORGANIC MATTER
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10062 Location: KF3-4A
Date collected: 07/09/93 Time collected: 1020 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
GREY-BROWN AND BROWN SILT, ROOTS, ORGANIC MATTER
Is there TCL/TAL data? no

Sample ID:K10063 Location: KF3-4B
Date collected: 07/09/93 Time collected: 1030 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
WET GREY-BROWN SILT, SOME ROOTS
Is there TCL/TAL data? no

Sample ID:K10064 Location: KF3-5A
Date collected: 07/09/93 Time collected: 1040 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILTY MEDIUM TO FINE SAND, SOME ROOTS
Is there TCL/TAL data? no

Sample ID:K10065 Location: KF3-5B
Date collected: 07/09/93 Time collected: 1050 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: COARSE Sample method: AUGER
Sample description:
LIGHT BROWN MEDIUM TO COARSE SAND WITH SOME GRAVEL
Is there TCL/TAL data? no

Sample ID:K10066 Location: KF3-6A
Date collected: 07/09/93 Time collected: 1110 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN MEDIUM AND FINE SANDY SILT AND ROOTS
Is there TCL/TAL data? no

Sample ID:K10067 Location: KF3-6B
Date collected: 07/09/93 Time collected: 1120 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SAND
Is there TCL/TAL data? no

Sample ID:K10068 Location: KF3-7A
Date collected: 07/09/93 Time collected: 1130 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
ORANGE-BROWN FINE TO MEDIUM SAND, SOME GRAVEL
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10069 Location: KF3-7B
Date collected: 07/09/93 Time collected: 1140 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
ORANGE-BROWN FINE TO MEDIUM SAND
Is there TCL/TAL data? no

Sample ID:K10070 Location: KF3-8A (MS/MSD)
Date collected: 07/09/93 Time collected: 1200 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
ORANGE-BROWN FINE TO MEDIUM SAND, SOME GRAVEL
Results of immunoassay test: greater than 1 mg/kg
Is there TCL/TAL data? no

Sample ID:K10071 Location: KF3-8B
Date collected: 07/09/93 Time collected: 1205 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
ORANGE-BROWN FINE TO MEDIUM SAND
Results of immunoassay test: less than 1 mg/kg
Is there TCL/TAL data? no

Sample ID:K10072 Location: RB-3 (RINSE BLANK)
Date collected: 07/09/93 Time collected: 1330 Water depth: 0.00 ft
Depth: 0.00 to 0.00 ft Soil type: Sample method: AUGER
Is there TCL/TAL data? no

Sample ID:K10073 Location: KF3-9A
Date collected: 07/12/93 Time collected: 1745 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
LIGHT BROWN SILTY FINE SAND, SOME ROOTS AND GRAVEL
Results of immunoassay test: less than 1 mg/kg
Is there TCL/TAL data? no

Sample ID:K10074 Location: KF5-8A
Date collected: 07/13/93 Time collected: 1220 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILTY VERY FINE SAND, SOME ROOTS AND ORGANICS
Results of immunoassay test: less than 1 mg/kg
Is there TCL/TAL data? no

Sample ID:K10075 Location: KF5-8B
Duplicate of: K10076
Date collected: 07/13/93 Time collected: 1230 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN SILTY VERY FINE SAND
Results of immunoassay test: less than 1 mg/kg
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10076 Location: D-6
Duplicate of: K10075
Date collected: 07/13/93 Time collected: 1230 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN SILTY VERY FINE SAND
Results of immunoassay test: less than 1 mg/kg
Is there TCL/TAL data? no

Sample ID:K10077 Location: KF5-7A
Date collected: 07/13/93 Time collected: 1400 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT WITH LIGHT BROWN FINE SAND, SOME ROOTS AND ORGANICS
Is there TCL/TAL data? no

Sample ID:K10078 Location: KF5-7B
Date collected: 07/13/93 Time collected: 1410 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SANDY SILT, SOME ROOTS
Is there TCL/TAL data? no

Sample ID:K10079 Location: KF5-6A
Date collected: 07/13/93 Time collected: 1420 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT WITH SOME FINE SAND AND ROOTS, MOIST
Is there TCL/TAL data? no

Sample ID:K10080 Location: KF5-6B
Date collected: 07/13/93 Time collected: 1430 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT, SOME FINE SAND, MOIST
Is there TCL/TAL data? no

Sample ID:K10081 Location: KF5-5A
Date collected: 07/13/93 Time collected: 1500 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN MOIST SILT WITH SOME FINE SAND AND ROOTS
Is there TCL/TAL data? no

Sample ID:K10082 Location: KF5-5B
Duplicate of: K10083
Date collected: 07/13/93 Time collected: 1510 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SAND WITH SILT
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10083 Location: D-7
Duplicate of: K10082
Date collected: 07/13/93 Time collected: 1510 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SAND WITH SILT
Is there TCL/TAL data? no

Sample ID:K10084 Location: KF5-4A
Date collected: 07/13/93 Time collected: 1550 Water depth: 0.50 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BLACK WET SILT AND ORGANIC MATTER
Is there TCL/TAL data? no

Sample ID:K10085 Location: KF5-4B
Date collected: 07/13/93 Time collected: 1600 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
WET BLACK SILT WITH ORGANICS TO WET BLACK SILT WITH SOME SAND AND GRAVEL
Is there TCL/TAL data? no

Sample ID:K10086 Location: KF5-3A
Date collected: 07/13/93 Time collected: 1630 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SANDY SILT
Is there TCL/TAL data? no

Sample ID:K10087 Location: KF5-3B
Date collected: 07/13/93 Time collected: 1640 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE TO MEDIUM SAND, SOME ROOTS
Is there TCL/TAL data? no

Sample ID:K10088 Location: KF5-2A
Date collected: 07/13/93 Time collected: 1700 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
BROWN FINE SANDY SILT WITH ROOTS
Is there TCL/TAL data? yes

Sample ID:K10089 Location: KF5-2B
Date collected: 07/13/93 Time collected: 1710 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: SCOOP
Sample description:
BROWN FINE SAND, SOME SILT
Is there TCL/TAL data? yes

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10090 Location: KF5-2C
Duplicate of: K10091
Date collected: 07/13/93 Time collected: 1715 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SAND
Is there TCL/TAL data? no

Sample ID:K10091 Location: D-8
Duplicate of: K10090
Date collected: 07/13/93 Time collected: 1715 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SAND
Is there TCL/TAL data? no

Sample ID:K10092 Location: KF5-1A
Date collected: 07/13/93 Time collected: 1730 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT WITH SOME FINE SAND AND ROOTS
Is there TCL/TAL data? no

Sample ID:K10093 Location: KF5-1B
Date collected: 07/13/93 Time collected: 1740 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT WITH SOME FINE SAND AND ROOTS
Is there TCL/TAL data? no

Sample ID:K10094 Location: KF5-1C
Date collected: 07/13/93 Time collected: 1745 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SAND, SOME SILT TO LIGHT BROWN MEDIUM TO COARSE SAND
Is there TCL/TAL data? no

Sample ID:K10095 Location: RB-4 (RINSE BLANK)
Date collected: 07/13/93 Time collected: 2100 Water depth: 0.00 ft
Depth: 0.00 to 0.00 ft Soil type: Sample method: AUGER
Is there TCL/TAL data? yes

Sample ID:K10096 Location: KF6-2A
Date collected: 07/14/93 Time collected: 1010 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT AND ROOTS TO BROWN AND GREY-BROWN CLAY
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10097 Location: KF6-2B
Date collected: 07/14/93 Time collected: 1020 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10098 Location: KF6-2C
Date collected: 07/14/93 Time collected: 1030 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SANDY CLAY WITH FINE SAND
Is there TCL/TAL data? no

Sample ID:K10099 Location: KF6-1A
Duplicate of: K10100
Date collected: 07/14/93 Time collected: 1045 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
LIGHT BROWN AND GREY-BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10100 Location: D-9
Duplicate of: K10099
Date collected: 07/14/93 Time collected: 1045 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
LIGHT BROWN AND GREY-BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10101 Location: KF6-1B
Date collected: 07/14/93 Time collected: 1050 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
ORANGE-BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10102 Location: KF6-1C
Date collected: 07/14/93 Time collected: 1100 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SANDY CLAY AND FINE SAND
Is there TCL/TAL data? no

Sample ID:K10103 Location: KF6-3A
Date collected: 07/14/93 Time collected: 1130 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILTY FINE SAND WITH ROOTS
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10104 Location: KF6-3B (MS/MSD)
Date collected: 07/14/93 Time collected: 1140 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SAND, TRACE OF SILT WITH ROOTS
Is there TCL/TAL data? no

Sample ID:K10105 Location: KF6-3C
Date collected: 07/14/93 Time collected: 1145 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN AND BROWN FINE SAND
Is there TCL/TAL data? no

Sample ID:K10106 Location: KF6-4A
Date collected: 07/14/93 Time collected: 1200 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN MOIST SILT, ROOTS, SOME FINE SAND AND CLAY
Is there TCL/TAL data? no

Sample ID:K10107 Location: KF6-4B
Duplicate of: K10108
Date collected: 07/14/93 Time collected: 1210 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
MOIST BROWN AND GREY-BROWN FINE SAND, SOME FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10108 Location: D-10
Duplicate of: K10107
Date collected: 07/14/93 Time collected: 1210 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
MOIST BROWN AND GREY-BROWN FINE SAND, SOME FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10109 Location: KF6-4C
Date collected: 07/14/93 Time collected: 1215 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
VERY MOIST GREY FINE SAND WITH SOME FINE SANDY CLAY, WATER AT 15"
Is there TCL/TAL data? no

Sample ID:K10110 Location: KF6-5A
Date collected: 07/14/93 Time collected: 1230 Water depth: 0.50 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN AND GREY BROWN WET SILT, ROOTS, ORGANIC MATTER
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10111 Location: KF6-5B
Date collected: 07/14/93 Time collected: 1240 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: Sample method: AUGER
Sample description:
BROWN WET SILT, ROOTS AND ORGANIC MATTER, TRACE OF GREY-BROWN CLAY
Is there TCL/TAL data? no

Sample ID:K10112 Location: KF6-5C
Date collected: 07/14/93 Time collected: 1245 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
GREY-BROWN SILT AND PEAT MATERIAL WITH GREY-BROWN CLAY
Is there TCL/TAL data? no

Sample ID:K10113 Location: KF7-3A
Date collected: 07/14/93 Time collected: 1340 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN AND LIGHT-BROWN SILTY FINE SAND, SOME ROOTS
Is there TCL/TAL data? no

Sample ID:K10114 Location: KF7-3B
Date collected: 07/14/93 Time collected: 1350 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN AND GREY-BROWN MOIST FINE SAND
Is there TCL/TAL data? no

Sample ID:K10115 Location: KF7-3C
Date collected: 07/14/93 Time collected: 1355 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
WET LIGHT BROWN FINE TO COARSE SAND, WATER AT 15"
Is there TCL/TAL data? no

Sample ID:K10116 Location: KF7-2A
Date collected: 07/14/93 Time collected: 1405 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT AND FINE SAND
Is there TCL/TAL data? no

Sample ID:K10117 Location: KF7-2B
Duplicate of: K10118
Date collected: 07/14/93 Time collected: 1415 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN AND ORANGE-BROWN FINE SAND
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10118 Location: D-11
Duplicate of: K10117
Date collected: 07/14/93 Time collected: 1415 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN AND ORANGE-BROWN FINE SAND
Is there TCL/TAL data? no

Sample ID:K10119 Location: KF7-2C
Date collected: 07/14/93 Time collected: 1420 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN AND ORANGE-BROWN FINE SAND
Is there TCL/TAL data? no

Sample ID:K10120 Location: KF7-1A
Date collected: 07/14/93 Time collected: 1430 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10121 Location: KF7-1B
Date collected: 07/14/93 Time collected: 1435 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SAND WITH SOME FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10122 Location: KF7-1C
Date collected: 07/14/93 Time collected: 1445 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SANDY CLAY WITH FINE SAND
Is there TCL/TAL data? no

Sample ID:K10123 Location: KF7-4A
Duplicate of: K10124
Date collected: 07/14/93 Time collected: 1500 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SANDY SILT
Is there TCL/TAL data? no

Sample ID:K10124 Location: D-12
Duplicate of: K10123
Date collected: 07/14/93 Time collected: 1500 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SANDY SILT
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10125 Location: KF7-4B
Date collected: 07/14/93 Time collected: 1520 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10126 Location: KF7-4C (MS/MSD)
Date collected: 07/14/93 Time collected: 1530 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN AND GREY-BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10127 Location: KF7-5A
Date collected: 07/14/93 Time collected: 1540 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN AND GREY-BROWN SILT AND SILTY CLAY WITH ROOTS AND ROOT MATTER
Is there TCL/TAL data? no

Sample ID:K10128 Location: KF7-5B
Date collected: 07/14/93 Time collected: 1550 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN AND GREY-BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10129 Location: KF7-5C
Date collected: 07/14/93 Time collected: 1555 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
WATER AT 12", WET BROWN AND GREY-BROWN CLAY
Is there TCL/TAL data? no

Sample ID:K10130 Location: RB-5 (RINSE BLANK)
Date collected: 07/14/93 Time collected: 1800 Water depth: 0.00 ft
Depth: 0.00 to 0.00 ft Soil type: Sample method: AUGER
Is there TCL/TAL data? no

Sample ID:K10131 Location: KF8-1A
Date collected: 07/16/93 Time collected: 0940 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
BROWN FINE SANDY SILT WITH ROOTS
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10132 Location: KF8-1B
Date collected: 07/16/93 Time collected: 0945 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SAND, SOME ROOTS
Is there TCL/TAL data? no

Sample ID:K10133 Location: KF8-1C
Date collected: 07/16/93 Time collected: 0950 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SAND
Is there TCL/TAL data? no

Sample ID:K10134 Location: KF8-2A
Date collected: 07/16/93 Time collected: 0955 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
BROWN FINE SANDY SILT WITH ROOTS
Is there TCL/TAL data? no

Sample ID:K10135 Location: KF8-2B
Date collected: 07/16/93 Time collected: 1000 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SANDY SILT
Is there TCL/TAL data? no

Sample ID:K10136 Location: KF8-2C
Duplicate of: K10137
Date collected: 07/16/93 Time collected: 1005 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SANDY SILT WITH SOME GREY-BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10137 Location: D-13
Duplicate of: K10136
Date collected: 07/16/93 Time collected: 1005 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SANDY SILT WITH SOME GREY-BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10138 Location: KF8-3A
Date collected: 07/16/93 Time collected: 1010 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
BROWN FINE SANDY SILT WITH ROOTS
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10139 Location: KF8-3B
Date collected: 07/16/93 Time collected: 1015 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SANDY SILT, TRACE OF GREY-BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10140 Location: KF8-3C
Date collected: 07/16/93 Time collected: 1020 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SANDY SILT WITH SOME GREY-BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

Sample ID:K10141 Location: KF8-4A
Date collected: 07/16/93 Time collected: 1025 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
MOIST BROWN FINE SAND AND SILT WITH ROOTS
Is there TCL/TAL data? no

Sample ID:K10142 Location: KF8-4B
Date collected: 07/16/93 Time collected: 1030 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
MOIST BROWN TO GREY-BROWN SILTY FINE SAND
Is there TCL/TAL data? no

Sample ID:K10143 Location: KF8-4C
Date collected: 07/16/93 Time collected: 1035 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
ORANGE-BROWN AND GREY CLAY
Is there TCL/TAL data? no

Sample ID:K10144 Location: KF8-5A (MS-MSD)
Date collected: 07/16/93 Time collected: 1040 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
GREY-BROWN SILT WITH SOME FINE SANDY CLAY AND ROOTS
Is there TCL/TAL data? no

Sample ID:K10145 Location: KF8-5B
Date collected: 07/16/93 Time collected: 1045 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
GREY-BROWN FINE SANDY CLAY
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10146 Location: KF8-5C
Duplicate of: K10147
Date collected: 07/16/93 Time collected: 1050 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
WATER AT 18", GREY-BROWN AND LIGHT BROWN CLAY
Is there TCL/TAL data? no

Sample ID:K10147 Location: D-14
Duplicate of: K10146
Date collected: 07/16/93 Time collected: 1050 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
WATER AT 18", GREY-BROWN AND LIGHT BROWN CLAY
Is there TCL/TAL data? no

Sample ID:K10148 Location: RB-6 (RINSE BLANK)
Date collected: 07/16/93 Time collected: 1245 Water depth: 0.00 ft
Depth: 0.00 to 0.00 ft Soil type: Sample method: AUGER
Is there TCL/TAL data? no

Sample ID:K10149 Location: OM-3A
Date collected: 07/20/93 Time collected: 1210 Water depth: 0.50 ft
Depth: 0.00 to 0.17 ft Soil type: FINE Sample method: CORE
Sample description:
DARK BROWN SILT AND ORGANIC MATTER
Is there TCL/TAL data? no

Sample ID:K10150 Location: OM-3B
Date collected: 07/20/93 Time collected: 1215 Water depth: 0.00 ft
Depth: 0.17 to 0.50 ft Soil type: FINE Sample method: CORE
Sample description:
GREY AND ORANGE-BROWN MOTTLED CLAY WITH SOME FINE TO MEDIUM SAND
Is there TCL/TAL data? no

Sample ID:K10151 Location: OM-3C
Date collected: 07/20/93 Time collected: 1220 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: CORE
Sample description:
GREY-BROWN CLAY WITH SOME FINE LIGHT GREY SAND
Is there TCL/TAL data? no

Sample ID:K10152 Location: OM-3D
Date collected: 07/20/93 Time collected: 1225 Water depth: 0.00 ft
Depth: 1.00 to 1.50 ft Soil type: FINE Sample method: CORE
Sample description:
NO DESCRIPTION AVAILABLE
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10153 Location: OM-1A
Date collected: 07/20/93 Time collected: 1440 Water depth: 0.00 ft
Depth: 0.00 to 0.17 ft Soil type: FINE Sample method: SCOOP
Sample description:
DARK BROWN SILT WITH ROOTS AND SOME GREY CLAY
Is there TCL/TAL data? no

Sample ID:K10154 Location: OM-1B (MS/MSD)
Date collected: 07/20/93 Time collected: 1450 Water depth: 0.00 ft
Depth: 0.17 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
GREY CLAY WITH SOME DARK BROWN SILT AND ROOTS
Is there TCL/TAL data? yes

Sample ID:K10155 Location: OM-1C
Date collected: 07/20/93 Time collected: 1455 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
GREY AND ORANGE-BROWN MOTTLED CLAY
Is there TCL/TAL data? no

Sample ID:K10156 Location: OM-1D
Date collected: 07/20/93 Time collected: 1500 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
MOIST GREY-BROWN CLAY
Is there TCL/TAL data? no

Sample ID:K10157 Location: OM-1E
Duplicate of: K10158
Date collected: 07/20/93 Time collected: 1505 Water depth: 0.00 ft
Depth: 2.00 to 3.00 ft Soil type: FINE Sample method: AUGER
Sample description:
WATER AT 24", GREY-BROWN FINE SANDY CLAY, VERY MOIST
Is there TCL/TAL data? no

Sample ID:K10158 Location: D-15
Duplicate of: K10157
Date collected: 07/20/93 Time collected: 1505 Water depth: 0.00 ft
Depth: 2.00 to 3.00 ft Soil type: FINE Sample method: AUGER
Sample description:
WATER AT 24", GREY-BROWN FINE SANDY CLAY, VERY MOIST
Is there TCL/TAL data? no

Sample ID:K10159 Location: OM-2A
Date collected: 07/20/93 Time collected: 1610 Water depth: 0.00 ft
Depth: 0.00 to 0.17 ft Soil type: FINE Sample method: SCOOP
Sample description:
DARK BROWN SILT, ROOTS, AND ORGANICS WITH A TRACE OF CLAY
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10160 Location: OM-2B
Date collected: 07/20/93 Time collected: 1615 Water depth: 0.00 ft
Depth: 0.17 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
MOIST GREY-BROWN SILT AND CLAY
Is there TCL/TAL data? no

Sample ID:K10161 Location: OM-2C
Date collected: 07/20/93 Time collected: 1620 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
GREY AND ORANGE-BROWN MOTTLED CLAY WITH SOME FINE SAND
Is there TCL/TAL data? no

Sample ID:K10162 Location: OM-2D
Date collected: 07/20/93 Time collected: 1625 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
WATER AT 12", WET LIGHT BROWN FINE SAND
Is there TCL/TAL data? no

Sample ID:K10163 Location: OM-2E
Date collected: 07/20/93 Time collected: 1630 Water depth: 0.00 ft
Depth: 2.00 to 3.00 ft Soil type: FINE Sample method: AUGER
Sample description:
WET LIGHT BROWN TO GREY-BROWN FINE SAND
Is there TCL/TAL data? no

Sample ID:K10164 Location: RB-7 (RINSE BLANK)
Date collected: 07/20/93 Time collected: 1930 Water depth: 0.00 ft
Depth: 0.00 to 0.00 ft Soil type: Sample method: SCOOP
Is there TCL/TAL data? no

Sample ID:K10165 Location: PM-2A
Date collected: 07/21/93 Time collected: 1000 Water depth: 0.00 ft
Depth: 0.00 to 0.17 ft Soil type: FINE Sample method: CORE
Sample description:
VERY SOFT DARK BROWN SILT
Is there TCL/TAL data? no

Sample ID:K10166 Location: PM-2B
Date collected: 07/21/93 Time collected: 1000 Water depth: 0.00 ft
Depth: 0.17 to 0.50 ft Soil type: FINE Sample method: CORE
Sample description:
SOFT DARK BROWN SILT WITH PEAT AND ORGANICS
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10167 Location: PM-2C
Duplicate of: K10168
Date collected: 07/21/93 Time collected: 1000 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: CORE
Sample description:
BROWN PEAT, SOME ROOTS
Is there TCL/TAL data? no

Sample ID:K10168 Location: D-16
Duplicate of: K10167
Date collected: 07/21/93 Time collected: 1000 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: CORE
Sample description:
BROWN PEAT, SOME ROOTS
Is there TCL/TAL data? no

Sample ID:K10169 Location: PM-2D (MS/MSD)
Date collected: 07/21/93 Time collected: 1000 Water depth: 0.00 ft
Depth: 1.00 to 1.75 ft Soil type: FINE Sample method: CORE
Sample description:
BROWN PEAT, SOME ROOTS
Is there TCL/TAL data? no

Sample ID:K10170 Location: PM-1A
Date collected: 07/21/93 Time collected: 1115 Water depth: 0.00 ft
Depth: 0.00 to 0.17 ft Soil type: FINE Sample method: CORE
Sample description:
DARK BROWN VERY SOFT SILT
Is there TCL/TAL data? no

Sample ID:K10171 Location: PM-1B
Duplicate of: K10172
Date collected: 07/21/93 Time collected: 1115 Water depth: 0.00 ft
Depth: 0.17 to 0.50 ft Soil type: FINE Sample method: CORE
Sample description:
BROWN PEAT WITH SOME SILT AND GREY-BROWN FINE SAND
Is there TCL/TAL data? yes

Sample ID:K10172 Location: D-17
Duplicate of: K10171
Date collected: 07/21/93 Time collected: 1115 Water depth: 0.00 ft
Depth: 0.17 to 0.50 ft Soil type: FINE Sample method: CORE
Sample description:
BROWN PEAT WITH SOME SILT AND GREY-BROWN FINE SAND
Is there TCL/TAL data? yes

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10173 Location: PM-1C
Date collected: 07/21/93 Time collected: 1115 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: CORE
Sample description:
GREY-BROWN FINE TO MEDIUM SAND, TRACE OF PEAT AND SHELLS
Is there TCL/TAL data? no

Sample ID:K10174 Location: PM-1D
Date collected: 07/21/93 Time collected: 1115 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: CORE
Sample description:
GREY-BROWN FINE TO MEDIUM SAND, TRACE OF PEAT AND SHELLS
Is there TCL/TAL data? no

Sample ID:K10175 Location: PM-1E
Date collected: 07/21/93 Time collected: 1115 Water depth: 0.00 ft
Depth: 2.00 to 3.00 ft Soil type: COARSE Sample method: CORE
Sample description:
GREY-BROWN MEDIUM TO COARSE SAND WITH SHELLS
Is there TCL/TAL data? no

Sample ID:K10176 Location: PM-3A
Date collected: 07/21/93 Time collected: 1230 Water depth: 0.00 ft
Depth: 0.00 to 0.17 ft Soil type: FINE Sample method: CORE
Sample description:
VERY LOOSE DARK BROWN SILT
Is there TCL/TAL data? no

Sample ID:K10177 Location: PM-3B
Date collected: 07/21/93 Time collected: 1230 Water depth: 0.00 ft
Depth: 0.17 to 0.50 ft Soil type: FINE Sample method: CORE
Sample description:
DARK BROWN SILT AND PEAT
Is there TCL/TAL data? no

Sample ID:K10178 Location: PM-3C
Date collected: 07/21/93 Time collected: 1230 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: CORE
Sample description:
DARK BROWN SILT AND PEAT
Is there TCL/TAL data? no

Sample ID:K10179 Location: PM-3D
Duplicate of: K10180
Date collected: 07/21/93 Time collected: 1230 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: CORE
Sample description:
DARK BROWN PEAT TO GREY-BROWN FINE SAND
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10180 Location: D-18
Duplicate of: K10179
Date collected: 07/21/93 Time collected: 1230 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: CORE
Sample description:
DARK BROWN PEAT TO GREY-BROWN FINE SAND
Is there TCL/TAL data? no

Sample ID:K10181 Location: PM-3E
Date collected: 07/21/93 Time collected: 1230 Water depth: 0.00 ft
Depth: 2.00 to 2.33 ft Soil type: FINE Sample method: CORE
Sample description:
GREY-BROWN FINE SAND
Is there TCL/TAL data? no

Sample ID:K10182 Location: RB-8 (RINSE BLANK)
Date collected: 07/21/93 Time collected: 1615 Water depth: 0.00 ft
Depth: 0.00 to 0.00 ft Soil type: Sample method: CORE
Is there TCL/TAL data? no

Sample ID:K10197 Location: KF1-1A
Date collected: 08/03/93 Time collected: 0930 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN FINE SANDY SILT WITH ROOTS
Is there TCL/TAL data? no

Sample ID:K10198 Location: KF1-1B
Date collected: 08/03/93 Time collected: 0940 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE TO MEDIUM SAND, SOME BROWN SILT
Is there TCL/TAL data? no

Sample ID:K10199 Location: KF1-1C
Date collected: 08/03/93 Time collected: 0950 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE TO MEDIUM SAND AND BROWN SILT
Is there TCL/TAL data? no

Sample ID:K10200 Location: KF1-2A
Date collected: 08/03/93 Time collected: 0955 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN FINE SANDY SILT WITH ROOTS
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10201 Location: KF1-2B
Date collected: 08/03/93 Time collected: 1000 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN FINE TO MEDIUM SAND AND SILT
Is there TCL/TAL data? no

Sample ID:K10202 Location: KF1-2C
Duplicate of: K10203
Date collected: 08/03/93 Time collected: 1010 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE TO COARSE SAND, TRACE SILT
Is there TCL/TAL data? no

Sample ID:K10203 Location: D-20
Duplicate of: K10202
Date collected: 08/03/93 Time collected: 1010 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE TO COARSE SAND, TRACE SILT
Is there TCL/TAL data? no

Sample ID:K10204 Location: KF1-3A (MS/MSD)
Date collected: 08/03/93 Time collected: 1040 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
DARK BROWN FINE SANDY SILT WITH ROOTS AND ROOT MASS
Is there TCL/TAL data? yes

Sample ID:K10205 Location: KF1-3B
Duplicate of: K10206
Date collected: 08/03/93 Time collected: 1100 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
FROM LIGHT BROWN FINE TO MEDIUM SAND TO GREY AND RED-BROWN MOTTLED CLAY
Is there TCL/TAL data? yes

Sample ID:K10206 Location: D-21
Duplicate of: K10205
Date collected: 08/03/93 Time collected: 1100 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
FROM LIGHT BROWN FINE TO MEDIUM SAND TO GREY AND RED-BROWN MOTTLED CLAY
Is there TCL/TAL data? yes

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10207 Location: KF1-4A
Date collected: 08/03/93 Time collected: 1120 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SAND, SOME SILT AND MEDIUM SAND, ROOTS
Is there TCL/TAL data? no

Sample ID:K10208 Location: KF1-4B
Date collected: 08/03/93 Time collected: 1125 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE TO COARSE SAND, BROWN CLAY AT BOTTOM
Is there TCL/TAL data? no

Sample ID:K10209 Location: KF1-5A (MS/MSD)
Date collected: 08/03/93 Time collected: 1140 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
DARK BROWN FINE SAND AND SILT, SOME ROOTS
Is there TCL/TAL data? no

Sample ID:K10210 Location: KF1-5B
Date collected: 08/03/93 Time collected: 1145 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN FINE SAND AND SILT WITH ROOTS
Is there TCL/TAL data? no

Sample ID:K10211 Location: KF1-6A
Date collected: 08/03/93 Time collected: 1150 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
GRASS COVER, BROWN FINE SANDY SILT WITH GRAVEL
Is there TCL/TAL data? no

Sample ID:K10212 Location: KF1-6B
Date collected: 08/03/93 Time collected: 1155 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE TO MEDIUM SAND AND GRAVEL
Is there TCL/TAL data? no

Sample ID:K10213 Location: KF1-7A
Duplicate of: K10214
Date collected: 08/03/93 Time collected: 1210 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
GRASS COVER, HARD PACKED BROWN FINE SANDY SILT, TRACE OF FINE GRAVEL
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:K10214 Location: D-22
Duplicate of: K10213
Date collected: 08/03/93 Time collected: 1210 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
GRASS COVER, HARD PACKED BROWN FINE SANDY SILT, TRACE OF FINE GRAVEL
Is there TCL/TAL data? no

Sample ID:K10215 Location: KF1-7B
Date collected: 08/03/93 Time collected: 1215 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: SCOOP
Sample description:
BROWN FINE SANDY SILT WITH SOME GRAVEL
Is there TCL/TAL data? no

Sample ID:K10216 Location: KF1-8A
Date collected: 08/03/93 Time collected: 1230 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: SCOOP
Sample description:
BROWN FINE SANDY SILT WITH GRAVEL
Results of immunoassay test: less than 1 mg/kg
Is there TCL/TAL data? no

Sample ID:K10217 Location: KF1-8B
Date collected: 08/03/93 Time collected: 1240 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL
Results of immunoassay test: less than 1 mg/kg
Is there TCL/TAL data? no

Sample ID:K10218 Location: RB-10 (RINSE BLANK)
Date collected: 08/03/93 Time collected: 1550 Water depth: 0.00 ft
Depth: 0.00 to 0.00 ft Soil type: Sample method: AUGER
Is there TCL/TAL data? no

Sample ID:P10001 Location: PF1-1A
Date collected: 07/07/93 Time collected: 1340 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SAND TO DARK BROWN FINE SAND AND SILT WITH ROOTS
Is there TCL/TAL data? no

Sample ID:P10002 Location: PF1-1B
Date collected: 07/07/93 Time collected: 1345 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN FINE SAND AND SILT WITH ROOTS
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:P10003 Location: PF1-2A
Date collected: 07/07/93 Time collected: 1400 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT, FINE SAND, SOME ROOTS AND CLAY
Is there TCL/TAL data? no

Sample ID:P10004 Location: PF1-2B
Date collected: 07/07/93 Time collected: 1410 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN AND GREY-BROWN SILT AND CLAY WITH SOME SLAG
Is there TCL/TAL data? no

Sample ID:P10005 Location: PF1-3A
Duplicate of: P10006
Date collected: 07/07/93 Time collected: 1430 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN AND DARK BROWN FINE SAND AND SILT, SOME GRAVEL
Is there TCL/TAL data? no

Sample ID:P10006 Location: D-1
Duplicate of: P10005
Date collected: 07/07/93 Time collected: 1430 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN AND DARK BROWN FINE SAND AND SILT, SOME GRAVEL
Is there TCL/TAL data? no

Sample ID:P10007 Location: PF1-3B
Date collected: 07/07/93 Time collected: 1440 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN AND DARK BROWN FINE SAND WITH SILT AND GRAVEL
Is there TCL/TAL data? no

Sample ID:P10008 Location: PF1-4A
Date collected: 07/07/93 Time collected: 1500 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
LIGHT BROWN FINE SAND TO DARK BROWN SILT WITH SOME FINE SAND
Is there TCL/TAL data? no

Sample ID:P10009 Location: PF1-4B
Date collected: 07/07/93 Time collected: 1505 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT, SOME LIGHT BROWN FINE SAND
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:P10010 Location: PF1-5A (MS/MSD)
Date collected: 07/07/93 Time collected: 1515 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT, TRACE OF LIGHT BROWN FINE SAND, SOME ROOTS & ORGANIC MATTER
Is there TCL/TAL data? no

Sample ID:P10011 Location: PF1-5B
Date collected: 07/07/93 Time collected: 1525 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN SILT, TRACE OF FINE SAND
Is there TCL/TAL data? no

Sample ID:P10012 Location: RB-1 (RINSE BLANK)
Date collected: 07/07/93 Time collected: 1800 Water depth: 0.00 ft
Depth: 0.00 to 0.00 ft Soil type: Sample method: AUGER
Is there TCL/TAL data? no

Sample ID:P10183 Location: PF2-1A
Date collected: 08/02/93 Time collected: 1245 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILTY FINE SAND WITH ROOTS
Is there TCL/TAL data? no

Sample ID:P10184 Location: PF2-1B
Date collected: 08/02/93 Time collected: 1250 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILTY FINE SAND WITH SOME ROOTS
Is there TCL/TAL data? no

Sample ID:P10185 Location: PF2-1C
Date collected: 08/02/93 Time collected: 1300 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN AND RED-BROWN SILTY FINE TO MEDIUM SAND, TRACE OF ROOTS
Is there TCL/TAL data? no

Sample ID:P10186 Location: PF2-2A
Date collected: 08/02/93 Time collected: 1330 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE SANDY SILT, SOME ROOTS, TRACE OF BLACK CINDERS, GRASS COVER
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:P10187 Location: PF2-2B
Date collected: 08/02/93 Time collected: 1335 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN FINE TO MEDIUM SAND WITH SOME CINDERS
Is there TCL/TAL data? no

Sample ID:P10188 Location: PF2-2C
Duplicate of: P10189
Date collected: 08/02/93 Time collected: 1345 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE TO MEDIUM SAND, SOME FILL MATERIAL, I.E. CINDERS
Is there TCL/TAL data? no

Sample ID:P10189 Location: D-19
Duplicate of: P10188
Date collected: 08/02/93 Time collected: 1345 Water depth: 0.00 ft
Depth: 1.00 to 2.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN FINE TO MEDIUM SAND, SOME FILL MATERIAL, I.E. CINDERS
Is there TCL/TAL data? no

Sample ID:P10190 Location: PF2-3A
Date collected: 08/02/93 Time collected: 1410 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT, SOME FINE SAND AND ROOTS, GRASS COVER
Is there TCL/TAL data? no

Sample ID:P10191 Location: PF2-3B
Date collected: 08/02/93 Time collected: 1420 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT, SOME FINE SAND AND ROOTS
Is there TCL/TAL data? no

Sample ID:P10192 Location: PF2-4A
Date collected: 08/02/93 Time collected: 1450 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT, SOME FINE SAND, GRASS COVER
Is there TCL/TAL data? no

Sample ID:P10193 Location: PF2-4B
Date collected: 08/02/93 Time collected: 1500 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT, SOME FINE SAND
Is there TCL/TAL data? no

FLOODPLAIN SOIL SAMPLES
SUMMARY OF FIELD DATA
KALAMAZOO RIVER

Sample ID:P10194 Location: PF2-5A
Date collected: 08/02/93 Time collected: 1515 Water depth: 0.00 ft
Depth: 0.00 to 0.50 ft Soil type: FINE Sample method: AUGER
Sample description:
BROWN SILT AND FINE SAND, SOME MEDIUM SAND, GRASS COVER
Is there TCL/TAL data? no

Sample ID:P10195 Location: PF2-5B
Date collected: 08/02/93 Time collected: 1520 Water depth: 0.00 ft
Depth: 0.50 to 1.00 ft Soil type: FINE Sample method: AUGER
Sample description:
DARK BROWN FINE SANDY SILT
Is there TCL/TAL data? no

Sample ID:P10196 Location: RB-9 (RINSE BLANK)
Date collected: 08/02/93 Time collected: 1800 Water depth: 0.00 ft
Depth: 0.00 to 0.00 ft Soil type: Sample method: AUGER
Is there TCL/TAL data? no

Appendix B
Chain-of-Custody Forms

Complete Set — All the PCreek Kzoo Floodplain Samples.

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO.: 1645.52 | PROJECT NAME: Kalamazoo River

SAMPLERS: (Signature)

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB's	TOC					REMARKS
													F.P. Soils
PFI-1A	7/2/93	13:40		X	P10001	2	1	1					Duplicate No. 1
PFI-1B		13:45		X	P10002	1	1						
PFI-2A		14:00		X	P10003	2	1	1					
PFI-2B		14:10		X	P10004	1	1						
PFI-3A		14:30		X	P10005	2	1	1					
D-1		-		X	P10006	2	1	1					
PFI-3B		14:40		X	P10007	1	1						
PFI-4A		15:00		X	P10008	2	1	1					
PFI-4B		15:05		X	P10009	1	1						
PFI-5A		15:15		X	P10010	4	2	2					MS/MSD for PCB's, MS only for TOC
PFI-5B		15:25		X	P10011	1	1						
RB-1	7/2/93	18:00		X	P10012	4	2	2					
TB	7/2/93	-		X	Temperature Blank	1							

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	7/2/93 15:30				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB60002292

BLASLAND & BOUCK ENGINEERS, P.C.
6723 Towpath Road, Box 66
Syracuse, New York 13214-0066
TEL: 315-446-9120
FAX: 315-449-0017

CHAIN OF CUSTODY RECORD

PROJ. NO.: 6452 | PROJECT NAME: Kalamazoo River

SAMPLERS: (Signature) Tracy Palmer

Floodplain Soils

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	Number of Containers	PCBs	TOC					REMARKS
PF2-1A	8/2/93	12:45		X	P10183	2	1	1					
PF2-1B	8/2/93	13:30		X	P10184	1	1						
PF2-1C	8/2/93	13:00		X	P10185	1	1						
PF2-2A	8/2/93	13:30		X	P10186	2	1	1					
PF2-2B	8/2/93	13:35		X	P10187	1	1						
PF2-2C	8/2/93	13:45		X	P10188	1	1						
D-18	8/2/93	—		X	P10189	1	1						
PF2-3A	8/2/93	14:10		X	P10190	2	1	1					
PF2-3B	8/2/93	14:20		X	P10191	1	1						
PF2-4A	8/2/93	14:50		X	P10192	2	1	1					
PF2-4B	8/2/93	15:00		X	P10193	1	1						
PF2-5A	8/2/93	15:15		X	P10194	2	1	1					
PF2-5B	8/2/93	15:20		X	P10195	1	1						
RB-9	8/2/93	18:00		X	P10196	4	2	2					Rinse Blank
Temp Blank	8/2/93	—		X	Temperature Blank	1							Cooler # 194

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	Relinquished by: (Signature)	DATE	TIME	Relinquished by: (Signature)
Tracy Palmer	8/3/93	17:00					
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	Relinquished by: (Signature)	DATE	TIME	Relinquished by: (Signature)
Relinquished by: (Signature)	DATE	TIME	Received for Laboratory by: (Signature)	DATE	TIME	Remarks:	

KB60002293

7/12/93
1393786HCDR

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

BLASLAND & BOUCK ENGINEERS, P.C.
6723 Towpath Road, Box 66
Syracuse, New York 13214-0066
TEL: 315-446-9120
FAX: 315-449-0017

CHAIN OF CUSTODY RECORD

PROJ. NO.: 645.09 | PROJECT NAME: Kalamazoo River

SAMPLERS: (Signature)

Floodplain Soils

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	Number of Containers	PCB's	TOC	PCB's/Sem. Volat. Lcs	TAL Inorganics	TCL Volat. Lcs	REMARKS
KFI-1A	8/3/93	9:30		X	K10197	2	1	1				
KFI-1B	8/3/93	9:40		X	K10198	1	1					
KFI-1C	8/3/93	9:50		X	K10199	1	1					
KFI-2A	8/3/93	9:55		X	K10200	2	1	1				MS/MSD
KFI-2B	8/3/93	10:00		X	K10201	1	1					
KFI-2C	8/3/93	10:10		X	K10202	1	1					
D-20	8/3/93	-		X	K10203	1	1					
KFI-3A	8/3/93	10:40		X	K10204	9		1	2	2	4	MS/MSD on everything except TOC
KFI-3B	8/3/93	11:00		X	K10205	4			1	1	2	
D-21	8/3/93	-		X	K10206	4			1	1	2	
KFI-4A	8/3/93	11:20		X	K10207	2	1	1				
KFI-4B	8/3/93	11:25		X	K10208	1	1					
KFI-5A	8/3/93	11:40		X	K10209	4	2	2				MS/MSD PCBs + TOC
KFI-5B	8/3/93	11:45		X	K10210	1	1					

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	Relinquished by: (Signature)	DATE	TIME	Relinquished by: (Signature)
	8/3/93	17:00					
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	Relinquished by: (Signature)	DATE	TIME	Relinquished by: (Signature)
Relinquished by: (Signature)	DATE	TIME	Received for Laboratory by: (Signature)	DATE	TIME	Remarks:	

7/12/93
1393786HCDR

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB600022 94

BLASLAND & BOUCK ENGINEERS, P.C.
6723 Towpath Road, Box 66
Syracuse, New York 13214-0066
TEL: 315-446-9120
FAX: 315-449-0017

CHAIN OF CUSTODY RECORD

PROJ. NO. 64509 | PROJECT NAME: Kalamazoo River

SAMPLERS: (Signature) Gregg Palmer

Floodplain Soils

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	Number of Containers	PCB's	TOC					REMARKS
KFI-6A	8/3/93	11:20		X	K10211	2	1	1					
KFI-6B	8/3/93	11:55		X	K10212	1	1						
KFI-7A	8/3/93	12:10		X	K10213	2	1	1					
D-22	8/3/93	—		X	K10214	2	1	1					
KFI-7B	8/3/93	12:15		X	K10215	1	1						
KFI-8A	8/3/93	12:30		X	K10216	2	1	1					
KFI-8B	8/3/93	12:40		X	K10217	1	1						
RB-10	8/3/93	13:50		X	K10218	4	2	2					

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	Relinquished by: (Signature)	DATE	TIME	Relinquished by: (Signature)
Gregg Palmer	8/3/93	17:00					
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	Relinquished by: (Signature)	DATE	TIME	Relinquished by: (Signature)
Relinquished by: (Signature)	DATE	TIME	Received for Laboratory by: (Signature)	DATE	TIME	Remarks:	

7/12/93
1393786HCDR

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO. 1145.13 | PROJECT NAME: KALAMAZOO RIVER

SAMPLERS: (Signature) Tracy Palmer

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB	TCL	PCB/Semi VOA	VOA	THC Inorganics		REMARKS
KF2-1A	7/6/93	8:45		✓	K10013 ✓	2	1	1					
KF2-1B		8:50		✓	K10014	1	1						
KF2-1C		8:55		✓	K10015	1	1						
KF2-2A		9:10		✓	K10016	2	1	1					
KF2-2B		9:20		✓	K10017	1	1						
KF2-2C		9:30		✓	K10018	1	1						
KF2-3A		9:55		✓	K10019	5		1	1	2	1		
KF2-3B		10:10		✓	K10020	4		3	1	2	1		
KF2-4A		10:40		✓	K10021	2	1	1					
D-2		—		✓	K10022	2	1	1					
KF2-4B		10:50		✓	K10023	1	1						
KF2-5A		11:00		✓	K10024	2	1	1					
KF2-5B		11:15		✓	K10025	1	1						
KF2-6A		11:30		✓	K10026	2	1	1					
KF2-6B	✓	11:40		✓	K10027	1	1						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Tracy Palmer	7/9/93 17:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB60002296

LANU ... JCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
[illegible]	[illegible] River

SAMPLERS: (Signature) [signature]

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB	TCL				Temp Blank	REMARKS
KF2-7A	3/4/97	12:00		✓	K10028	2	1	1					
KF2-7B	/	12:15		✓	K10029	1	1						
KF2-8A		12:20		✓	K10030	2	1	1					
KF2-8B		12:30		✓	K10031	2	2						MS/MSD ON PCB'S
RB-2	✓	11:15		✓	K10032	4	2	2					RINSE BLANK
					Temp Blank	1						1	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	3/4/97 12:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB6002297

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO. 645.30 | PROJECT NAME: KALAMAZOO RIVER

SAMPLERS: (Signature)

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB	TCL	PCB/Semi VOA	TAL Inorganics	VOA		REMARKS
KF3-1A	7/9/93	8:45		✓	K10053	5		1	1	1	2		
KF3-1B		8:55		✓	K10054	4			1	1	2		
KF3-1C		9:10		✓	K10055	1	1						
KF3-2A		9:20		✓	K10056	2	1	1					
KF3-2B		9:35		✓	K10057	1	1						
KF3-2D		9:55		✓	K10058	1	1						
KF3-2C		10:40		✓	K10059	1	1						
KF3-3A		10:00		✓	K10060	2	1	1					
KF3-3B		10:10		✓	K10061	1	1						
KF3-4A		10:30		✓	K10062	2	1	1					
KF3-4B		10:35		✓	K10063	1	1						
KF3-5A		10:40		✓	K10064	2	1	1					
KF3-5B		10:50		✓	K10065	1	1						
KF3-6A		11:10		✓	K10066	2	1	1					
KF3-6B	↓	11:20		✓	K10067	1	1						

7-44 4 4 4 4 4 4

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Tracy Tolan	7/9/93 17:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) Kathleen L. Hem	Date / Time 7/10/93 1045	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB000298

000000

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO. 645.30 | PROJECT NAME: KALAMAZOO RIVER

SAMPLERS: (Signature)

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PUB	10U				Temp Blank	REMARKS
KF3-7A	7/9/93	10:30			K10068	2	1	1					
KF3-7B	7/9/93	11:40			K10069	1	1						
KF3-8A	7/9/93	12:00			K10070	4	2	2					MS/MSD on PCB, MS on TOC
KF3-8B	7/9/93	12:05			K10071	1	1						
RB-3	7/9/93	13:30			K10072	4	2	2					RINSE BLANK
Temp.	7/9/93			✓	Temperature Blank	1						1	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Johnny Palmer	7/9/93 17:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB600022

43

LAN- UCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO. KC 31 | PROJECT NAME Kalamazoo River

SAMPLERS: (Signature)

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB	TOC	Cyanide	PCB VOA	TAL Inorganic	REMARKS
KF4-1A	7/8	11:15		✓	K10033	3	1	2				MS ON TOC ✓
KF4-1B		14:55		✓	K10034	1	1					
KF4-1C		15:00		✓	K10035	1	1					
D-3		—		✓	K10036	1	1					
KF4-2A		15:25		✓	K10037	2	1	1				
KF4-2B		15:30		✓	K10038	1	1					
KF4-2C		15:40		✓	K10039	1	1					
KF4-3A		15:50		✓	K10040	2	1	1				
KF4-3B		15:55		✓	K10041	1	1					
KF4-4A		16:05		✓	K10042 ✓	5	2	1	1	2	1	
KF4-4B		16:10		✓	K10043 ✓	4		3	1	2	1	
KF4-5A		16:20		✓	K10044	2	1	1				
KF4-5B		16:25		✓	K10045	1	1					
KF4-6A		16:30		✓	K10046	2	1	1				
D-4 KF4-6B	↓	—		✓	K10047	2	1	1				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	7/9/92 17:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB60002300

BLASLAND & BOUCK ENGINEERS, P.C.

000004

CHAIN OF CUSTODY RECORD

PROJ. NO. 645.31 | PROJECT NAME: Kalamazoo River

SAMPLERS: (Signature) Gregg Palmer

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB	TCL				Temp Blank	REMARKS
KF4-6B	7/6/93	16:40		✓	K10048	1	1						
KF4-7A	7/6/93	16:45		✓	K10049	2	2	1					
KF4-7B	7/6/93	16:50		✓	K10050	1	1						
KF4-8A	7/6/93	17:00		✓	K10051	4	2	2					MS/MSD PCB, MS TOC
KF4-8B	7/6/93	17:05		✓	K10052	1	1						
T	7/6/93				TEMP BLANK							1	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Gregg Palmer	7/9/93 17:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		Maureen Kelly	7/16/93 1645		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB000230

9

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
645.20	Kalamazoo River

SAMPLERS: (Signature)

Gregg Palmer

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB's	TOC	TCL Volatiles	TCL Semi-Volatiles/PCB's	TAL Inorganics	Temp.	REMARKS
KFS-2A	7/13/93	17:00		X	K10088	5		1	2	1	1		
KFS-2B	7/13/93	17:10		X	K10089	4			2	1	1		
KFS-2C	7/13/93	17:15		X	K10090	1	1						
D-8	7/13/93	—		X	K10091	1	1						
KFS-1A	7/13/93	17:30		X	K10092	2	1	1					
KFS-1B	7/13/93	17:40		X	K10093	1	1						
KFS-1C	7/13/93	17:45		X	K10094	1	1						
RB-4	7/13/93	2100		X	K10095	10		2	2	4	2		Rinse Blank
Temp. Blank	7/13/93	—		X	Temperature Blank	1						1	Cooler # 1

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Gregg Palmer	7/14/93 18:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB60002302

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO. 645.20 | PROJECT NAME Kalamazoo River

SAMPLERS: (Signature) Gregg Zaluzec

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB's	TOC	REMARKS
KFS-9A	7/12/93	17:45		X	K10073	2	1	1	
KFS-8A	7/13/93	12:20		X	K10074	2	1	1	
KFS-8B		12:30		X	K10075	1	1		
D-6		-		X	K10076	1	1		
KFS-7A		14:00		X	K10077	2	1	1	
KFS-7B		14:10		X	K10078	1	1		
KFS-6A		14:20		X	K10079	2	1	1	
KFS-6B		14:30		X	K10080	1	1		
KFS-5A		15:00		X	K10081	2	1	1	
KFS-5B		15:10		X	K10082	1	1		
D-7		-		X	K10083	1	1		
KFS-4A		15:50		X	K10084	2	1	1	
KFS-4B		16:00		X	K10085	1	1		
KFS-3A		16:20		X	K10086	2	1	1	
KFS-3B		16:40		X	K10087	1	1		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Gregg Zaluzec	7/14/93 15:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB600023O3

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
645-22	Kalamazoo River

SAMPLERS: (Signature)

Lucy Palusia

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB	TCL						REMARKS
KFL-2A	7/14/93	10:10		✓	K10096	2	1	1						
KFL-2B	7/14/93	10:20		✓	K10097	1	1							
KFL-2C	7/14/93	10:30		✓	K10098	1	1							
KFL-1A	7/14/93	10:45		✓	K10099	2	1	1						
D-9	7/14/93	—		✓	K10100	2	1	1						
KFL-1B	7/14/93	10:50		✓	K10101	1	1							
KFL-1C	7/14/93	11:00		✓	K10102	1	1							
KFL-3A	7/14/93	11:30		✓	K10103	2	1	1						
KFL-3B	7/14/93	11:40		✓	K10104	2	2							MS/MSD on PCB
KFL-3C	7/14/93	11:45		✓	K10105	1	1							
KFL-4A	7/14/93	12:00		✓	K10106	2	1	1						
KFL-4B	7/14/93	12:10		✓	K10107	1	1							
D-10	7/14/93	—		✓	K10108	1	1							
KFL-4C	7/14/93	12:15		✓	K10109	1	1							
KFL-5A	7/14/93	2:30		✓	K10110	2	1	1						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Lucy Palusia	7/15/93 10:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB6002304

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
45.22	KALAMAZOO River

SAMPLERS: (Signature)

Peggy Parkinson

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB	TOC						REMARKS
KF-5B	7/14/93	12:40		✓	K10111	1	1							
KF-5C	7/14/93	12:45		✓	K10112	1	1							
KF7-3A	7/14/93	13:40		✓	K10113	2	1	1						
KF7-3B	7/14/93	13:50		✓	K10114	1	1							
KF7-3C	7/14/93	13:55		✓	K10115	1	1							
KF7-2A	7/14/93	14:05		✓	K10116	2	1	1						
KF7-2B	7/14/93	14:15		✓	K10117	1	1							
D-11	7/14/93	—		✓	K10118	1	1							
KF7-2C	7/14/93	14:20		✓	K10119	1	1							
KF7-1A	7/14/93	14:30		✓	K10120	2	1	1						
KF7-1B	7/14/93	14:35		✓	K10121	1	1							
KF7-1C	7/14/93	14:45		✓	K10122	1	1							
KF7-4A	7/14/93	15:00		✓	K10123	2	1	1						
D-12	7/14/93			✓	K10124	2	1	1						
KF7-4B	7/14/93	15:20		✓	K10125	1	1							

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Peggy Parkinson	7/15/93 10:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB000305

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO.: 645.22

PROJECT NAME: KALAMAZOO RIVER

SAMPLERS: (Signature) Gregg Paluszek

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB	TOC				Temp	REMARKS
KF7-4C	7/14/93	15:30		✓	K10126	2	2						MS/MSD ON PCB's
KF7-5A	7/14/93	15:40		✓	K10127	2	1	1					
KF7-5B	7/14/93	15:50		✓	K10128	1	1						
KF7-5C	7/14/93	15:55		✓	K10129	1	1						
RB-5	7/14/93	18:00		✓	K10130	4	2	2					RINSE BLANK
TRIP BLANK	7/14/93	—		—	Temp Blank	1						1	Cooler # 194

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Gregg Paluszek	7/15/93 10:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB6002306

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ NO.	PROJECT NAME
645.22	Kalamazoo River

SAMPLERS: (Signature)

Peggy Palarie

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB's	TOC					REMARKS
KF8-1A	3/16/93	9:40		X	K10131	2	1	1					
KF8-1B	3/16/93	9:45		X	K10132	1	1						
KF8-1C	3/16/93	9:50		X	K10133	1	1						
KF8-2A	3/16/93	9:55		X	K10134	2	1	1					
KF8-2B	3/16/93	10:00		X	K10135	1	1						
KF8-2C	3/16/93	10:05		X	K10136	1	1						
D-13	3/16/93	[redacted]		X	K10137	1	1						
KF8-3A	3/16/93	10:10		X	K10138	2	1	1					
KF8-3B	3/16/93	10:15		X	K10139	1	1						
KF8-3C	3/16/93	10:20		X	K10140	1	1						
KF8-4A	3/16/93	10:25		X	K10141	2	1	1					
KF8-4B	3/16/93	10:30		X	K10142	1	1						
KF8-4C	3/16/93	10:35		X	K10143	1	1						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Peggy Palarie	3/16/93 13:06				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB600023O7

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
6453.22	Kalamazoo River

SAMPLERS: (Signature)

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB's	TOC					REMARKS
KF8 5A	3/16/93	10:40		X	K10194	3	2	1					MS/MSD - PCB's
KF8 5B	3/16/93	10:45		X	K10195	1	1						
KFE 5C	3/16/93	10:50		X	K10196	1	1						
D-14	3/16/93			X	K10197	1	1						
RB-6	3/16/93	12:45		X	K10198	4	2	2					
Trip Blank	3/16/93	-		X	Temperature Blank	1							Cooler # 241

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	3/16/93 13:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB000230B

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
645.22	Kalamazoo River

SAMPLERS: *(Signature)* [signature]

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CON-TAINERS	PCBs	TCL volatiles	TCL semi-volatiles	TAL			REMARKS Floodplain Soils
OM-3A	9/12/93	12:?0		x	K10149	1	1						
OM-3B		12:[illegible]		x	K10150	1	1						
OM-3C		[illegible]		x	K10151	1	1						
OM-3D		12:[illegible]		x	K10152	1	1						
OM-1A		14:40		x	K10153	1	1						
OM-1B		14:30		x	K10154 ✓	8		4	2	2			MS/MSD for TCL/TAL
OM-1C		[illegible]		x	K10155	1	1						
OM-1D		[illegible]		x	K10156	1	1						
OM-1E		[illegible]		x	K10157	1	1						
D-15		—		x	K10158	1	1						
OM-2A		[illegible]		x	K10159	1	1						
OM-2B		[illegible]		x	K10160	1	1						
OM-2C		14:?0		x	K10161	1	1						
OM-2D		[illegible]		x	K10162	1	1						
OM-2E		[illegible]		x	K10163	1	1						

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
[signature]	9/12 / [illegible]				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB6002309

Enforcer

10/4/13

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
645.22	Kalamazoo River

SAMPLERS: (Signature)

Gregg Palmer

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB's						REMARKS
													Floodplain Soils
FP-3D	7/21/93	12:30		X	K10179	1	1						
FP-3E	7/21/93	12:30		X	K10181	1	1						
D-18	7/21/93	—		X	K10180	1	1						
RR-8	7/21/93	16:15		X	K10182	2	2						
TRIP BLANK	7/21/93	—			Temperature Blank	1							Cooler # 236

KB000231.0

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Gregg Palmer	7/21/93 18:30				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

SLAN ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
645.22	Kalamazoo River

SAMPLERS: (Signature)

Lucy Tolerson

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB's	TCL Volatiles	TCL Semi-Volatiles	TAL Total Metals			REMARKS
													Floodplain Soils
RB-7	7/20/15	14:30		X	K10164	2	2						River Blank
FP-2A	7/20/15	10:15		X	K10165	1	1						
FP-2B	7/20/15	10:20		X	K10166	1	1						
FP-2C	7/20/15	10:25		X	K10167	1	1						
FP-2D	7/20/15	10:30		X	K10168	2	2						MS/MSD PCBs
D-16	7/20/15	10:40		X	K10169	1	1						
FP-1A	7/20/15	11:15		X	K10170	1	1						
FP-1B	7/20/15	11:15		X	K10171	4		2	1	1			
D-17	7/20/15	11:20		X	K10172	4		2	1	1			
FP-1C	7/20/15	11:25		X	K10173	1	1						
FP-1D	7/20/15	11:30		X	K10174	1	1						
FP-1E	7/20/15	11:35		X	K10175	1	1						
FP-3A	7/20/15	12:30		X	K10176	1	1						
FP-3B	7/20/15	12:30		X	K10177	1	1						
FP-3C	7/20/15	12:35		X	K10178	1	1						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Lucy Tolerson	7/20/15 12:30				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

KB60002311